February, 1953

THE CHEMIST

VOLUME XXX NUMBER 2

—C&EN

BERNARD E. SCHAAR

Receives Chicago AIC Chapter Honor Scroll from AIC President Work (right). Dr. B. S. Friedman, Chairman of Chicago Chapter, is on the left.

(See Page 61)

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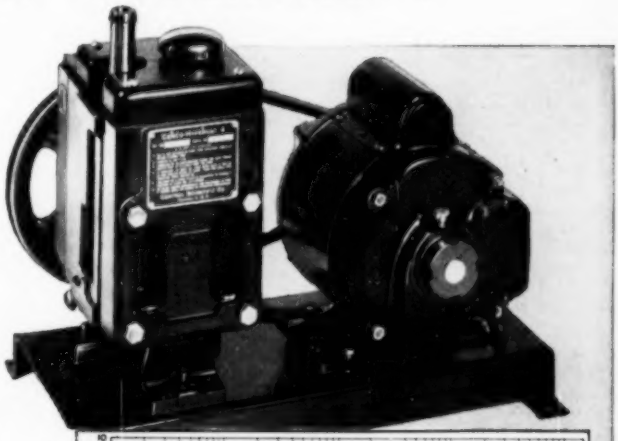

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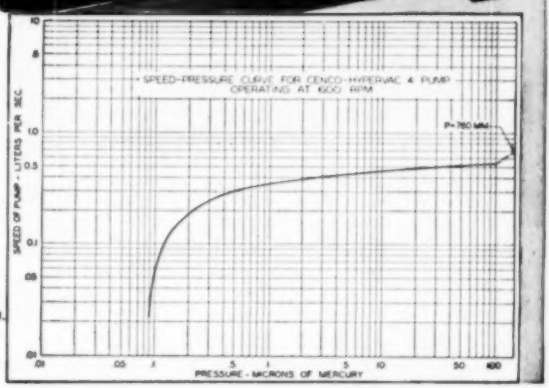

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1953 ANNUAL MEETING

Plan now to attend the 1953 Annual Meeting of The American Institute of Chemists, to be held at the Benjamin Franklin Hotel, Philadelphia, Pa., May 12th and 13th.

The Committee on Arrangements is working to make this the friendliest and most informative of meetings. Marcus Sittenfield,, F.A.I.C., 1411 Walnut St., Philadelphia 2, Pa., is in charge of arrangements: C. P. Neidig, Cherry Lane, Berwyn, Pa., is concerned with the program, and Hillary Robinette, P.O. Box 607, Ardmore, Pa., is arranging special events.

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EDITORIAL

Scientific Leadership in Smoke Control

By Robert T. Griebling, Executive Secretary, Air Pollution Control Association; Senior Fellow, Mellon Institute, 4400 Fifth Ave., Pittsburgh 13, Pa.

LITTLE did Richard Beatty Mellon dream that the $15,000 investment he made in the study of urban air pollution back in 1911 would yield that fabulous dividend visible today. He was a practical man and considered his $15,000 merely as an earnest to start men thinking about the possibility of fighting for, and obtaining, a cleaner atmosphere.

It was no accident that made Dr. Leonard Greenburg promise, upon his recent appointment as New York city's air pollution control commissioner, that "there is no reason why New Yorkers shouldn't breathe air as clean as the air in Pittsburgh."

And only a short time ago Pittsburgh was known as the Smoky City! Its cleanliness today has made the residents so sensitive that it's worth a comedian's future to make any derogatory remarks about the city's erstwhile grime.

For this Mr. Mellon can be thanked. The first grant for an investigation led to others, resulting not only in such vigorous organizations as Industrial Hygiene Foundation, which had its start in Mellon Institute, but also in the constant leadership provided by Dr. Edward R. Weidlein, Hon. AIC, president of the Institute, who coordinated the Pittsburgh area's various activities when the question of cleaner air became serious just before World War II.

Action was postponed when the war broke out, but a smoke control ordinance was drawn up in 1946, bringing industry and the railroads under control, and a year later the households were included, making the ordinance fully effective.

Action by the city was followed by Allegheny County. A realistic smoke abatement ordinance, fair to both industry and the public, had to be drawn up. The County Commissioners realized that no single individual could have the broad knowledge required to draft proper legislation. They therefore prevailed upon Dr. Weidlein to appoint a committee which would be representative of industry, labor, and the general public.

In the next eighteen months, Dr. Weidlein's committee turned in a marvelous performance. Needless to say, there were many heated discussions while differences of opinion were being ironed out. The membership of this advisory committee was made up of such diversified personalities as the president of the local chapter of the United Mine Workers, the president of the Congress of

Women's Clubs, the president of the Civic Club, the head of the local Teamsters' Union, as well as the presidents of such industrial giants as the United States Steel Company and Jones & Laughlin.

However, there was never the slightest indication of animosity. When the main portion of the ordinance was put before the advisory committee for approval, it was adopted unanimously.

Now Pittsburgh and Allegheny County have become the show-cases of the world where air purification is concerned. Two years ago, when the Air Pollution and Smoke Prevention Association of America (now the Air Pollution Control Associatoin) desired to move its headquarters to some location where it could collaborate with scientists in measuring the progress that had been made in air purification, it located in Mellon Institute in Pittsburgh, where it was welcomed with open arms.

It is now housed in a suite of rooms near that of Industrial Hygiene Foundation, and the staffs of both organizations are on most cordial terms. Not only do they confer constantly with each other, they also have the freedom to bring their problems to such capable advisers as Dr. Weidlein and Dr. William A. Hamor, F.A.I.C., director of research, who has been acquainted with urban air pollution problems since he studied them at first hand in New York more than forty years ago.

Not a week passes without a visit from someone seeking counsel in ameliorating the air pollution conditions of the district in which he lives. Many are the visitors from foreign countries. The correspondence of the Air Pollution Control Association is kept on an international scale.

Interest in the work of the Association is mounting, brought about largely by the publication of *Air Repair*, a quarterly journal devoted to problems of air pollution control. And the membership of the Association, since moving to Mellon Institute, has had a healthy increase, indicating that the work being done is bearing fruit.

No matter what the simile — whether it's the tossed pebble, the chickens coming home to roost, the beams of the far-throwing candle, bread upon the waters — any one can be used to describe the effect that Mr. Mellon's original $15,000 had on the air purification movement, though it is by far not the only allotment by him and others for this purpose.

The world's chemists can indeed be proud that so much progress was made under the direction of one of their number. Mr. Mellon's grant made the research possible — Dr. Weidlein's administration made it successful.

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Avenues of Service

Bernard E. Schaar, F.A.I.C.

President, Schaar & Co., 754 Lexington St., Chicago 7, Illinois

(Presented when he received the Honor Scroll of the Chicago AIC Chapter, October 10th, Chicago, Ill.)

IT IS easier to generalize than to be specific. In consequence, I have chosen to title my remarks, "Avenues of Service" and shall discuss broad areas where chemists and other scientists and engineers can serve their profession and community, rather than particularize on definitive procedures.

One of the primary purposes of THE AMERICAN INSTITUTE OF CHEMISTS is to enhance the prestige of the profession and to extend its influence and usefulness. In this it has eminently justified its existence. An outstanding service has also been rendered by the Chicago Section of the American Chemical Society to individual chemists and to the community. It is patent that these two organizations, at least, are keenly aware of their responsibilities. In addition to direct benefits to their members, there is a tacit acceptance of duty beyond the purely professional.

That is as it should be. For example, one item all of us are aware of, is that chemists and all others who have been privileged to get a professional or academic education, were subsidized by their alma maters, whether State supported or privately endowed, to the extent of the greater part of the cost of their training, despite the current high tuition fees. Some are content to accept this gift and let it go at that. Others feel that they must do something in return, over and above good performance in the occupation for which their training fitted them. Salaries in most of the technical professions being what they are, only the exceptional few can repay in kind, that is, contribute financially to the support of their favorite institutions. All of us, however, can show our appreciation by some sort of public or community service.

There are many avenues along which one can travel. Regardless of the ones we choose, this type of work is its own reward. One gives and receives at the same time. Orchids may be few but there is real compensation in the personal satisfaction that comes from engaging in this type of activity. Most of the former Honor Scroll recipients have been outstanding in this respect in addition to their technical achievements.

Work for the Professional Societies

The first and most easily accessible path is the professional society to which one belongs. Here numerous jobs and committees are perennially

open to all who choose to enter. The obligation is primarily to the profession, to do some of the things that will keep the society functioning, that will strengthen it and broaden its usefulness, but which will also make it a constructive force in the community. Our professional societies are in existence because they have been kept alive and useful by the work of others who preceded us. We can do no less for those who will follow. We are merely temporary custodians, links in the chain of continuity.

Occasionally the long range results and the satisfaction far outweigh the immediate substantiality of the service, as those of you know who serve on employment committees, particularly when no jobs are available. I know several chemists, now in important positions, who would have left the profession had it not been for the friendly counseling of some member of an employment committee, even though no help could be given to place them at that time.

Some societies have well-organized Public Relations Committees, with registers of talks that can be given by their members. The radio is used increasingly to publicize topics related to science. The A.C.S. News Service is preeminent in publicizing chemists and chemistry. Dr. Walter J. Murphy, F.A.I.C., has had a number of excellent editorials in *Chemical and Engineering News* on public relations. You are all familiar with the papers presented at the last A.I.C. annual meeting on "Public Relations for the Chemist," some of which were published in *The Chemist*. The Engineering Joint Council, a cooperative venture of the five principal engineering societies, has public relations as one of its most important activities. It is currently planning to take in twelve more societies. The *Scientific Monthly* of the American Association for the Advancement of Science sponsors a series of radio broadcasts of scientific material and invites participation by universities and individuals. Science News Service and popular science magazines are also factors in public relations.

The most extensive program to publicize science that I know, was the series of broadcasts during intermissions of the Sunday Concerts of the New York Philharmonic Symphony, sponsored by the United States Rubber Company. It began in 1943 and consisted of about 80 talks by top-notch scientists, including many Nobel Prize winners. The subjects covered scientific work from the structure of atoms to the exploration of space. There were also a few talks by social scientists. The whole series is available in book form under the title "The Scientists Speak."

Much more is being done along this line, but enough has been mentioned to indicate the inexhaustible opportunities for service that are offered. Public relations work of this

nature unquestionably is of great value in informing the public about the accomplishments of scientists and engineers. It will increase their prestige, and therefore, their usefulness. In the main the substance of radio talks, public lectures, or popular science articles is factual and pertains to a single topic on which the speaker or writer is expert. While informative, they usually are not designed to coordinate the particular subject with a more basic consideration of scientific method or of the impact of science on society.

There is another type of publicity for science, dinned into the ears of listeners daily, that is a disservice to science and scientists. The "science proves" theme and pseudo-scientific statements conjured up by inspired ad writers to sell everything imaginable, tend to give people a totally false impression of scientists and their work. It is unconstructive exploitation of the word "science." If chemists could be instrumental in putting this type of advertising on a higher plane, I am sure the profession of chemistry would reap some benefit, to say nothing about relief to a long-suffering public.

The Technical Society Councils which have been organized in all parts of the country, offer many opportunities for public relations work. The potentiality for serving their communities and their constituent societies is great. Performance has lagged in some areas, principally because funds for most effective operation have not been available. Councils are designed so that the societies can cooperate in pursuing objectives which are beyond the scope or means of the individual societies. The combined memberships of the societies is a much greater force for community activity than any one society can command. Councils can become the overall agencies in spanning the gap between the technical programs of the societies and their relation to the community. As a medium for informing the public on technical matters and in creating opportunities for greater participation of technical men in public affairs, they offer a broad avenue for service.

Community Work

Outside his professional organizations, in the community at large, precisely the same opportunities for public service exist for the scientist and engineer as for any other citizen. Every "cause" under the sun has one or more organizations to further its aims. It is not difficult to be active in these, to serve on their boards or committees. The respect paid the scientist for creditable service in this area, in a measure is extended by his associates to his whole profession, and elevates its status.

There is increasing awareness that the changes in our mode of life, and in our international relations, resulting from scientific discoveries and their practical applications, demand a

greater measure of participation in public affairs than scientists and engineers formerly considered to be within their province. The lack of authentic information on scientific and technnological developments and their social concomitants, that mould our life and continuously change it, makes it imperative that people be better informed. This is necessary not alone so their judgments will be more soundly grounded. It is also necessary to assure the continued support of fundamental research by the public, through taxation and through private endowments, without which our technological advances will wither. Without such information, it is understandable why scientists find it necessary to be on the defensive with respect to their place in the civilized world.

World War I found our chemists feverishly developing poison gases and block busters, and our engineers, bombing planes. World War II saw the development of bacterial warfare and the birth of the atomic bomb. Hydrogen bombs and other weapons of destruction to horrible to contemplate are on the way. True, the Germans in World War I were deterred from using poison gases, after their first attempts, by the threat of retaliation in kind, bacteria have never been broadcast and only two atomic bombs were ever dropped as a war weapon. But these things are associated in the minds of people with scientists and engineers and have engendered a sense of fear for what might be in the offing, and mistrust of the professions that produce such things.

Regardless of how much we point with pride to the good things that flow, without end, from scientific and technological developments, the fear and mistrust, and the deliberate antagonism and opposition to verified scientific findings, remain. Evidences of this are to be found in such things as the opposition to the use of chemicals in foods revealed in the current hearings of a Congressional Committee; the propaganda against the use of fertilizers by certain groups of plant cultists; the opposition to fluoridation of water; the restrictions on the free publication of scientific research which in some cases go far beyond security requirements; the irresponsible character assassinations; the loyalty oaths and guilt by association verdicts; the refusal of passports and visas to certain scientists; the horoscopes in daily newspapers; the many monthly magazines on astrology; the misplaced love and tenderness of those who oppose animal experimentation; the opposition to flood control; the deliberate falsification of the aims of those who want adequate medical care for everybody; anti-semitism, Jim Crow laws, discrimination in employment opportunities and other denials of civil liberties — mention only a few things.

I know this sounds like a Jeremiad, but, if you will bear with me, I think you will find that I am not a dispenser of gloom.

There is nothing particularly new about this, except the nature of the things that are singled out for attack or claim the support of the misinformed. You will permit me to refer to an editorial of mine in the *Chemical Bulletin* in 1925, "The Significance of Dayton" which was written during the Scopes trial in Dayton, Tennessee:

> "Anti-evolution laws are but one phase of a narrow, illiberal, reactionary spirit pervading the country, which has already evidenced itself in the Eighteenth Amendment, the Ku Klux Klan, the censorship of literature and other movements of similar character. This spirit is perhaps the expression of a well-organized minority rather than the carefully thought out will of the country as a whole. The only solution is a wider distribution of knowledge."

It is extremely encouraging to note that the bitter controversy between science and religion over the theory of evolution has largely abated; the Eighteenth Amendment has been nullified; the Ku Klux Klan, except for occasional flare-ups, is not the sinister menace it once was. True, other movements, organizations and restrictive laws have succeeded them. Many hold a far greater threat to our liberties. But we can take heart in the thought that since these once powerful forces have been curbed, it should be possible to counteract, and eventually replace with more constructive movements, the current unscientific or anti-scientific, and in some cases, undemocratic and unAmerican trends, that are rampant today.

For the most part these things have had consideration by scientists in one field or another. Most of them are rooted in ignorance, misinformation or prejudice. Some are in the realm of politics; others in the attitudes, opinions, and practices of individuals in their daily lives. Some are deliberately fostered by amoral persons with their own axes to grind, regardless of the resulting harm; others, by well-intentioned people motivated by irrational fears.

These seemingly unrelated items are evidences of failure of our educational system to prepare people so they will not become the ready followers of equally misinformed or misguided people. It is also evidence of the failure of scientists to put their case across so that non-scientists can have some insight into what they have discovered, what they are doing now and how they do it, and what the ultimate goals are.

It is obvious that the groundwork for more rational thinking must be laid long before the individual reaches adulthood. For most people the die of intelligent citizenship is cast in the public school. All of us are adversely affected by the shortcomings of our educational system.

As Hutchins and others indicate, an important factor is to be found in the emphasis placed on the acquisition

of factual or practical knowledge throughout our primary and secondary educational system. It even extends into the college and university. In some cases it results in the almost total exclusion of cultural instruction, including the sciences, physical as well as social. Greater familiarity with such subjects unquestionably would prepare adults for clearer thinking.

This condition is closely linked with the great shortage of teachers, particularly those with adequate training in the sciences. In turn, this shortage reflects the current unattractiveness of the teaching profession as compared with opportunities in industry. Consideration of means to turn the tide is well within the province of all technically trained persons.

The present lapse is anachronistic. At a time when scientific findings and technological developments are high and constantly rising; when they have made a standard of living in this country undreamed of a half century ago and give promise of a better order everywhere, we find in many quarters, in and out of government, acts and movement which will hinder or even prevent further advance.

It is more in keeping with the restrictions and taboos of centuries past which throttled thinkers like Roger Bacon and nearly succeeded with Galileo; or which resulted during the French Revolution in the guillotining of Lavoisier, the father of modern chemistry, with the verdict that France had no need for men of science. The tendency is in the direction of stifling independent ideas, of forcing uniformity of thought, of stamping out opposition. Unrestrained, it could lead to authoritarian dicta with respect to scientific investigation such as we are witnessing in Russia at this time. A free and informed public there would not countenance such dogmatism. It never will for long in this country.

It would be well to keep in mind that progress in any endeavor does not proceed along a straight line, rising smoothly upward until the goal is reached. There are ups and downs, peaks and troughs, with each succeeding peak usually a little higher than the preceding. At present we seem to be in the trough of one of those recurring cycles of intellectual retrogression that have periodically afflicted the world. Depressing as it is, this trough does not seem to me to be as deep as the last one with its Klans, its Palmer raids or its Hitlers. And there is every reason to believe, that, when we pull out of it, the peak of the upswing will exceed the previous one.

In the 1951 Arthur Debon Little Memorial Lecture at the Massachusetts Institute of Technology on "Science and Democracy," Sir Henry Tizard had this to say: "The trouble is that people who hate are much more articulate than people who love,

and so make more noise in the world; and unfortunately, they are often infected in the highest degree with the desire to dominate their fellowmen. If the democratic countries combine firmness and strength with patience and tolerance, I see no reason for being pessimistic about the future."

Our democracy does have the inherent vitality to recover from these sieges of intellectual atavism, whether the attack is from the extreme left or the extreme right. Hope springs eternal. But hope alone is sterile and unproductive of change. Dynamic action must take the place of wishful thinking or scornful despair. . . .

Here are many avenues of service to his country, to his profession, and to himself, that can be followed by chemists and other technical men. They are fertile fields for those qualified to cultivate them.

Early in my career I ran squarely into a case of contempt for scientific procedures. A building was being erected by the company that employed me. I was instructed to sample and test each car of cement as it arrived and report the result to the foreman on the job before he used it. When I made my first report I found the cement was being used without waiting for the test. The foreman explained that he had run out of tested cement and had to use it to keep his men busy. Since the test was all right no harm was done, so I merely admonished him against using subsequent shipments until I reported. The next day the same thing happened. When I arrived on the third day, the foreman became somewhat exasperated and rather heatedly expounded his infallible method of testing cement. He said, "I don't have to wait for your report to find out if a cement is good. I can tell just by feeling it. Why, I don't even have to feel it. I can kick the outside of a bag and tell whether it is good or bad!" Although foremen have travelled far since those days in their faith in laboratory tests, on other levels of acceptance of scientific findings we seem still to be "kicking the bag."

The outstanding example of awareness of an obligation to society by scientists was the successful campaign of the atomic scientists to educate congress and the public on the dire implications of the atomic bomb. The result, as you know, was the Atomic Energy Commission and our proposal to the United Nations for an international body to control fissionable materials. It was a remarkable achievement that cannot be recalled too frequently. It reveals clearly what can be done when scientists leave their laboratories to perform, as scientists, a public service.

Articles on the social obligations of scientists are appearing in scientific journals with increasing frequency. The titles of some of these are in themselves quite illuminating. A recent symposium in the *Bulletin of*

the Atomic Scientists, will serve to illustrate the tenor of the thinking. It is called "The Duty of the Scientist in Society" and consists of the following articles: "Scientists are Quite Ordinary Folks" by A. V. Hill, 1922 Nobel Prize recipient in physiology, and who, to back up his thesis, was a member of the House of Commons for five years; "Science is Essentially Social" by Phillip Morrison, professor of physics at Cornell; "Working For a Society Where Science Can Thrive" by N. F. Mott, professor of physics, University of Bristol; "Scientists Have a Duty In Society" by Murray S. Levine of Oak Ridge; and "The Responsibilities of Scientists" by Lord Boyd Orr, a British authority on food and agriculture. A recent article in *Science* by Kirtley Mather is titled "The Problem of Antiscientific Trends Today." A great many more could be cited. I feel more at home today among these titles than I did twenty years ago when, as retiring chairman of the Chicago Section, the subject of my address was "Scientific Method and Human Relations."

Articles such as these are stimulating and might be provocative of action by other scientists who happen to read them, but they fall far short of maximum effectiveness because of the small and specialized audiences that they reach.

Evaluation of the Profession

I should like to say a word along a somewhat different line of service which though seemingly of limited application, actually is of substantial benefit to chemists as individuals and to the chemical profession. As a prelude, I am reminded of the story of three hod carriers working on a building, each filling his hod and carrying it to the bricklayers or masons. When asked what they were doing, the first one replied: "I am carrying mortar;" The second one answered, "I am carrying bricks;" but the third proudly said, "I am building a cathedral."

Young chemists just starting their careers also are faced with the necessity of evaluating their work. Those who have been imbued with the importance of their profession, first by their professors and later by their superiors in industry, will view their immediate tasks in a manner comparable to the third hod-carrier. They will know that, even though the things they are doing are relatively simple, they none-the-less are contributing, with others, to the perfection of something that is building our civilization. All are not geniuses, but all can and should have just such an appreciation of the importance of their work and their profession. It may or may not make them better chemists. It certainly will increase their self-respect, make them better citizens, and make it possible for them to live with themselves with greater

satisfaction and dignity. In proportion as the public is impressed with the worth of an individual chemist and with what he is able to transmit about the role of his profession in our civilization, so will our professional status rise. The same goes for young engineers.

Chemistry touches life at every point whether one knows any chemistry or not. Essentially all life is chemistry, plus a little physics and a bewildering amount of organization and cooperation on the microscopic level of the living cell. The well-being of every one is dependent upon chemistry. I think it is more important for non-chemists to appreciate this than it is for them to know the gas laws, the ionic theory, or how to balance equations. Not that it will do them any harm to know these things. They even might be a source of considerable interest and pleasure. However, it seems to me that in courses intended for non-chemists, if less emphasis were placed on the technicalities of chemistry and more on its social meanings, its universality, and its scientific method of discovering new facts, there would be more general understanding of the humanizing role of chemistry, and less antagonism to scientists.

Such a course would justify itself, I think, if it served no other purpose than to enable one to get a glimpse of the hidden beauty of the natural world in which we live, or to view with greater humility the mightiest works of men. Even those who intend to become chemists might well profit from this type of presentation. To those of us who love chemistry as a science and as a culture, the revulsion of feeling that so many have toward it, is, *ipso facto,* indicative that something was missing in the way it was presented to them.

I think we can go even farther. In addition to other reasons given for the current shortage of chemists and chemical engineers, we might find that introductory chemistry courses in high school and college actually kill the desire of most students to select chemistry as a career, instead of whetting their appetites for more. I know much thought is being given to the content of such courses. Some unquestionably do make incipient chemists, but not enough, otherwise the shortage would not be so acute. Only the most dedicated survive. This is an avenue of service that can be followed best by those in the business of teaching, but chemists in industry also might have some thoughts on the subject that could be helpful.

The satisfaction one derives from serving along any avenue has been mentioned. Unfortunately, there is another side to the picture. Serving is not all beer and skittles. Disappointments and frustrations are also part of the game. One's motives and good intentions even may be questioned occasionally. All of this must

be taken in stride. One must continue to work for the realization of the ends which were thought good, so long as there is some measure of progress toward their attainment. Differences of opinion with respect to procedures constantly arise. One cannot always be right. Others equally sincere and with comparable ability may have the better solutions. Frequently organizations which gave great promise at their inception, fail to function or to grow as planned. Where they fail, others with similar programs, profiting from earlier errors, might succeed. Discouragement has no place in the curricula of those whose sights are set high. But there can be no compromise with principles. When the issues in a particular organization demand their sacrifice, get out and go on to something else.

The avenues for service are legion. It is only necessary to make a choice, to select those which our inclinations and ability permit us to follow. A whole gamut of organizations is spread before us, offering an endless variety of challenging, of rewarding paths to follow.

Science does not have the answer to all human problems. Neither are scientists necessarily the best qualified to attack them. In a world increasingly dependent upon scientific findings for many, although not all of the good things of life, the special competence of scientists lies in helping people to acquire their ability, and their will, to unshackle their minds when attacking new problems in their field. The all-important issue today, the one that overshadows everything of a political or economic nature is the elimination of war. In this, scientists have no ready answer. In this atomic age, the attainment of peace is a new and different problem than it has been in the past. Each of us, in his way, had better give thought to the possibility of helping to achieve it. That it is receiving such consideration by some scientists is indicated by a document prepared by the National Research Council Committee on Unesco and the Engineer Joint Council for the Third National Conference of the U. S. National Commission for Unesco. Its assigned topic was "The Opportunities for Scientists and Engineers to Contribute to Peace through the United Nations System."

I would like to close with a quotation from the article by Hill previously mentioned. It expresses more tersely and in clearer language than I can command, the gist of what I have been trying to say. Hill wrote: "Science is in the best sense, I believe, key to the whole culture of our modern world, that general culture which exists in its different and presently contesting forms along the Potomac, the Volga, and the Yangtze. But scientists are only the special professional exponents of their way. What will count in the end is not

their acts alone nor their understanding of their duties, however deep, but the degree to which the general ends of science gain adherence among the people as a whole."

In the final analysis that is the goal toward which all avenues of service by scientists and engineers should lead.

B. E. Schaar — A Great Citizen

Dr. Ward V. Evans

Professor Emeritus, Northwestern University

(Presented when the Honor Scroll of the Chicago Chapter was awarded to Mr. Schaar.)

NOW, this man B. E. Schaar. I have known him for more than thirty years. I have bought his apparatus, read his editorials, fought with him; in fact done everything that would enable me to become very well acquainted with him and his type of mind.

When I was in England setting up a chemistry department in the G. I. University that the Army established in Shrivenham, I had a unique experience with Bernie. We had three freshman chemistry classes of about one-hundred students each. We had excellent equipment including some thirty expensive quantitative balances which the Army scrounged under my direction. The only thing we lacked were fractional platinum weights. Now to have excellent balances with these weights missing is just like having no balances. I went to the high brass about this four days before classes started and was informed that they would put the order through channels. That meant that I might, with good luck, get the weights in a month or two. I asked the Army if they would let me try at getting them. To my surprise they said yes. I wired Bernie in Chicago, told him to send them by air, and I would pay the bill pronto. When school opened, the little weights were in their boxes. I sent a check to Bernie but he didn't cash it. He waited. I told the Army I had the weights and would they pay. This went through channels and in about six months Bernie got a check from the Army. Then he sent mine back. That was a very smart piece of work. If he had cashed my check and I had tried to collect from the Army, I would probably have been court-martialled! . . .

Most of you do not know that B. E. Schaar is a farmer. He grows food plants particularly tomatoes. He even writes articles about farming. The

article is called, "Food Plants, Facts and Fancy." Bernie started this tomato culture in his home in the bath tub, I understand. He used liquids instead of earth as the growing medium, had large trellaces built to the ceiling to hold the luscious fruit. Things went along fine until Sarah interfered. Bernie also feared he didn't have space in the bathroom for the huge tomatoes he knew he could produce. So he moved the entire farm out to the Dunes. Whether he ever got a tomato there I am unable to state. I think he abandoned the farming venture soon after removal to the Dunes. He found he had more room out there for his tomatoes than he needed. During this farming fever, Bernie discovered a new kind of plantain which is now in the Chicago Museum of Natural History. If this plantain that Bernie discovered is of no more use than the plantains I know, I think this was a most useless discovery . . .

B. E. Schaar finds fault with many scientists, and justly so. He believes that a research man that does his research for his own glorification or monetary return without a thought for his fellow men is not a very good citizen. He is a thorough believer and practitioner of democracy. He practices in his own company, talks and writes about it and believes that if we in some way should apply scientific principles to democracy and racial problems, we might get somewhere. Instead of sitting back smugly and saying, I will get mine, or remarking that perhaps we are not smart enough to properly run a complex civilization, Bernie goes about his business — he and his good wife — doing more social work than thousands of their fellow-citizens put together.

He wants to see certain things come about and although he knows they will come slowly, he is convinced that with patience and application, we can accomplish the ends we desire. Schaar believes that a scientist has a definite social responsibility which increases in geometric ratio to his scientific attainments. This is a brand new idea. Most scientists like to live and work in their ivory towers and the rest of the world can go to the devil. They never think about the effect of their discoveries or care in the least about the effects.

Schaar always thinks more about the other fellow than he does about himself. There are very few men like this in the world. Unselfish, altruistic people are very rare. People that want to help and do good for the rest of humanity, many times at their own sacrifice, have about gone out of existence. We live the lives of dog eat dog — don't do any more work than you must — and grab everything you can. Climb to the top over the maimed bodies of your fellow men if possible. . . . Thoughts like this are never in the mind and heart of B. E. Schaar.

Schaar's altruistic ideals are the things that set him apart from most people, but the thing that perhaps he does not know and most people do not know, is that doing things for other people in a purely unselfish way is one of the surest roads to success for yourself.

Abou Ben Adam's name, you know, was not listed among those that loved the Lord; but when the names of those the love of God had blessed was read, Ben Adam's name led all the rest because he loved his fellow men.

I personally gave more than two-thousand, hour-long lectures, once, on gas defense for not a cent of money. I thought I was an altruist, but I wasn't. That work came back to me with work on its back a yard long, and Bernie is reaping tonight the recognition of some of his altruism. He also advocates that we should attack our social and economic problems as we attack our scientific problems. We pool our knowledge, get our scientists together, exchange knowledge, and get somewhere.

Our economic problems are not treated this way. We accept evils as impossible to prevent, we do not use the previous knowledge to help us and many of the people that might help have no interest at all.

Perhaps if we did attack our social-economic problems in a scientific way as Bernie recommends, we might get somewhere. At least we couldn't do any worse than we are doing now.

It gives me great pleasure to say these words of commendation about a man I admire as much as I admire B. E. Schaar. There are things that money can't buy.

Schaar's Contributions to Technical Society Activities

Thomas B. McEwan

Lester B. Knight Associates

(Presented when the Honor Scroll of the Chicago Chapter was awarded to Mr. Schaar.)

IN THE Queen's City of Ohio, Cincinnati, was born a prince of good fellows, Bernie Schaar, on April first (some people do not like to admit that they are April Foolhardy but Bernie and I are exceptions).

Bernie was always sure that he wanted to get into chemical engineering. While he engaged in several outside jobs, he also knew that he wanted to have his own company and in 1909 became president of Schaar & Company.

Being devoted to his profession, he naturally wished to associate with his fellows, which led in 1923 to his

becoming managing editor of the *Chemical Bulletin*, which he continued to edit until 1934. In 1932 he became president of the Chicago Section of the American Chemical Society, where his organizing ability was immediately felt.

Mr. Schaar is a fellow in THE AMERICAN INSTITUTE OF CHEMISTS and the American Association for the Advancement of Science. He has been active in the American Society for Testing Materials. As a natural result of all his experience, when it was decided that the Technical Societies of Chicago should take over holding an exhibit of war materials and "bits and pieces", the first show having been held by the War Production Board in the Stevens Hotel in 1940, this gentleman naturally was in the forefront of those cooperating.

Mr. Schaar has a flair for putting down in black and white the answers and objectives of a technical organization — so when it was thought advisable, following the first exhibit, to have a working committee to establish ways and means of getting Scientific Engineering and Technical Societies of Chicago to pull together, he sat in on the first meetings.

I have just been looking over the original announcement of the Formation of the Chicago Technical Societies Council. They asked me to chairman this group but I could not have carried on without the able assistance of Mr. Bernard E. Schaar as vice-chairman, representing the American Chemical Society.

You can readily see Bernie's hand writing in the announcement: "The Chicago Technical Societies Council" — "There are in Chicago many socities and groups interested in engineering, technical and scientific matters. These groups have in the past acted alone and independently of all other groups. The leaders of these groups have long felt the need of a coordinating body through which they might effect a greater unity of purpose.

"The Chicago War Production Clinic, staged at the request of W. P. B. by the various engineering societies at the Medinah Club on March 11, 1943, was a demonstration of what could be accomplished by cooperative effort. It drew an audience of 2,500 interested engineers, executives, production men and supervisory shop personnel for the purpose of discussing practical phases of war production.

"The outstanding success of this venture definitely indicated the need for and benefits to be derived from cooperative action, and pointed out the desirability of extending the scope of this effort to include further intersociety activities both present and post-war, and technical civic endeavors, as well as further efforts in behalf of the war effort.

"There are many problems which the technical societies in the Chicago area have in common. There are

many functions which an inter-allied organization can perform which are not covered by the individual societies, or which can be performed better by cooperative action.

"The Council will not duplicate any of the activities or overlap the functions of its member groups, but will perform a service for them that is beyond the scope of any individual group; namely, provide a common instrumentality for all groups interested in the broad and inclusive phases of modern engineering, technical and scientific studies."

Mr. Schaar worked hard on the implementation of this Inter-Society effort so we set forth our purpose. The purpose of this organization is:

(a) To provide a medium for cooperative action by the engineering, technical and scientific societies in Chicago and vicinity on matters of mutual interest which are beyond the scope of the individual societies or which can be performed better by cooperative action.

(b) To provide means for more effective public service by the member societies.

(c) To cultivate greater appreciation by the public of the part which the engineering, technical and scientific professions have contributed to human welfare.

and this was followed by certain immediate objectives and other further objectives.

We proceeded to issue a monthly bulletin and got out "Who's Who of the Engineering, Technical and Scientific Men of the Chicago Area". I remember sitting down with Mr. Schaar and working out statements regarding the functions of each committee. Typical of this is the one on the Building Committee, which reads as follows:

"In order that the Scientific, Engineering and Technical Societies of Chicago may have a center from which the influence of the council and the activities of the member societies can radiate, it is desirable that suitable quarters be obtained.

"These quarters should be centrally located and should have adequate facilities for holding many simultaneous meetings both large and small, with refectory service."

The council has a three-fold purpose:

(a) To provide a medium for cooperative action by the engineering, technical and scientific societies in Chicago and vicinity on matters of material interest which are beyond the scope of the individual societies or which can be performed better by cooperative action.

(b) To provide means for more effective public service by the member societies.

(c) To cultivate greater appreciation by the public of the part which engineering, technical and scientific professions have contributed to human welfare.

These three objectives are interrelated. The attainment of them will eventuate in greater benefits to our community from the members of the professions involved.

It is planned that the council shall become a wholesome factor in the life of the community exerting its influence in many ways according to the special skills of the members of the constituent societies. The training of these men fits them for greater participation in civic affairs than is called for in the exercise of their professions as individuals. The council will give them this opportunity for service.

Our entire industrial life is based primarily upon science, engineering and technology. A project, such as the council, which will enable these skills to function more effectively should be supported by industrialists, philanthropists and funds and foundations for furthering related activities.

A building capable of housing all of the scientific, engineering and technical societies of the city in their various activities will enable them to accomplish the purposes of the council much more effectively than from their separate and scattered headquarters. In consequence benefits will accrue to industry as well as to community life as a whole.

It is the business of the Building Committee to present these facts to industry, individuals and foundations in order that funds might be subscribed for the acquisition of such quarters. A minimum fund of $1,000,000.00 should be the goal of the Building Committee. The details of administration of the building may be left until the project is assured.

Much smaller cities than Chicago have already established similar centers. In Detroit the Rackham Foundation houses the Detroit Engineering Council in a magnificent building. In Cincinnati $1,000,000.00 has just been subscribed by the citizens and industries of that city for a building for the Cincinnati Engineering Council to be known as the Dean Schneider Memorial Building. It should be possible to duplicate, if not exceed, what has been done in those cities. The Building Committee should make a survey of foundations, industries and individuals that ought to be interested in this project.

That interest might be based on civic consciousness, on past benefits or in anticipation of future benefits to be derived from science, engineering or technology. The manner in which similar funds have been raised in the past should be studied. Persons who have successfully engineered the fund raising should be consulted. A campaign should then be outlined for presenting the project to those most likely to contribute. The proper per-

sons should be selected to make contacts and pledges should be obtained. Payment of pledges could be made contingent upon raising a certain amount, to be determined . . .

Mr. Schaar's heart has been close to the Council for many years. In 1948 he worked up a presentation entitled, "'A Monument to the Technical Men of Chicago", in which he outlined an approach to have a building to house all Chicago Technical Societies with meeting and refectory facilities available to those cooperating. A set of plans was drawn up by Mark Kalischer which we have and hope to put into being opportunely.

It is a great pleasure for me to be a part of the program at this recommendation of Mr. Bernard E. Schaar's service to the community and his fellow engineers.

Presentation of the Honor Scroll to Bernard E. Schaar

THE Honor Scroll of the Chicago AIC Chapter was presented to Bernard E. Schaar, president of Schaar & Company, 754 West Lexington St., Chicago 7, Illinois, on October tenth at a dinner meeting at The Furniture Club of America, Chicago. A reception preceded the dinner. Dr. Bernard S. Friedman, chairman of the Chapter, presided.

Dr. Ward V. Evans, a former recipient of the Honor Scroll and professor emeritus of Northwestern University, spoke on "Bernard Schaar — A Great Citizen."

Thomas S. McEwan, of Lester B. Knight Associates, Inc., and a cofounder with Mr. Schaar of the original Chicago Technical Societies Council, recounted "Bernard Schaar's Contributions to Technical Society Activities."

Dr. Lincoln T. Work, president of THE AMERICAN INSTITUTE OF CHEMISTS presented the Honor Scroll to Mr. Schaar, who responded with "Avenues of Service." (All of these papers appear in this issue of THE CHEMIST.)

The citation on the Honor Scroll reads:

Bernard E. Schaar was the honored guest at the testimonial dinner given by the Chicago Chapter of The American Institute of Chemists in recognition of his devotion through the years to the interests of chemists as professional men and as individuals, his untiring efforts in advancing the profession of chemistry, his years of service to technical societies, and his sincere efforts as a citizen to help make a better community.

To Germany: DR. James Bryant Conant, Hon. AIC, president of Harvard University, to serve as United States High Commissioner, appointed by President Eisenhower.

New Position: Charles H. Groff, F.A.I.C., who is now technical director of Watson-Standard Co., Pittsburgh 25, Pa. He was formerly technical director of Surface Chemicals, Inc., at McKees Rocks, Pa.

To Tennessee: Guy A. Kirton, F.A.I.C., who has been transferred from the New York office of Eastman Chemical Products, Inc., to its office at Kingsport, Tenn.

Conference: On Air Pollution Abatement in Industry, to be held by the Manufacturing Chemists' Association, Inc., at the Hotel Statler, Detroit, Michigan, February 26th and 27th.

Elected: Dr. W. F. Fair, Jr., F.A.I.C., former president of the Society of Rheology, to a three-year term on the Board of Governors of the National Association of Corrosion Engineers.

Elected: Dr. Bernard L. Oser, director of Food Research Laboratories, Inc., Long Island City, New York, to the New York Academy of Medicine.

Appointed: John O. Logan as vice president, director of sales, for Mathieson Industrial Chemicals Co., Division of Mathieson Chemical Corp., Baltimore, Md.

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Human Dignity

Don G. Mitchell

President, Sylvania Electric Products Inc.
New York, N. Y.

(Reprinted through the courtesy of the Industrial Hygiene Foundation from its Transactions of the 16th Annual Meeting, held at Mellon Institute, Pittsburgh, Pa.)

BUSINESS, commerce, industry, whatever name you give it, is but an economic device fashioned by man to make money. The incentive is a financial one. Unless there is a profit, there is no business, no industry.

We must not lose sight of this basic motive when we discuss such abstract concepts as the dignity of man, lest our emotions run away with us and we be criticized for insincerity.

There is an idea, shared by many, that industry is cold-blooded in seeking ways to make more profits. I shall not deny that there has been ample cause for this idea to exist. Nor do I think that in this era of greater enlightenment the cause has been removed. However, I would like to point out to you that, strictly speaking, business has no more blood in it to get cold or hot than a carrot.

Whatever errors or misdeeds have been attributed to business, have been made by some individual or group of individuals. A corporation cannot think. It cannot talk. It cannot make a decision, nor give an order. How can it be cold-blooded?

The problem of the dignity of man which we are considering this morning, therefore, is not between man and his employing corporation, but between man and man. And that is fortunate, because the relationship between men is constantly undergoing a change, and the change, I feel, is for the better. Perhaps I should modify that by saying that it is for the better so long as it exists in an atmosphere of individual fredom.

There are large sections of the world where business as an economic device no longer exists and where individual freedom has vanished. In those countries we see man's relation to man in the raw. In those places human dignity is unknown.

Fortunately, we still have individual liberty in this country. How much is left to us by each succeeding political and social generation will be determined by our desire to maintain our dignity as human beings.

Some of that dignity we are losing, and losing fast. People were caught on the horns of a dilemma, and they chose the way that seemed

to provide the greater benefits. I am referring, of course, to trade unionism. It is too soon to tell whether the benefits will be worth the price to be paid, because the end results of movements of this kind are not always clear for many generations. Furthermore, we can easily be misled in our thinking by extravagances of the moment.

Without being unmindful in the least of the large amount of economic and social good that has come out of collective actions, I am confident that whatever denies individual initiative and opportunity is bound to fail.

Not Created Equal

You gentlemen, who are of the medical profession, know full well that man is not created equal. And I, for one, would find it a most uncompensating world to live in if we were all created equal. In a world of equality there would be no incentive and, therefore, no progress. It could exist only in a world of unthinking animals and even then I presume nature, which appears to abhor exact sameness, would intervene.

We have to accept the fact that all people are different; that there is individuality. It is this quality in people that is responsible for man's dignity, which is nothing more or less than the recognition of a person as an individual. Dignity and ego are pretty closely related.

Personal recognition takes all sorts of forms, some of which would be amusing if they were not so pathetic. Exhibitionism, such as flagpole sitting, is but an adult exaggeration of the child's "Hey, Mom, see me."

Because, however, we are all individuals, each with an ego, who must live together in a society, we find there are limits to which we can go in attracting attention to ourselves and still be in good taste. Fortunately, these limits are no hardship to most people. In fact, you will find that the majority of people are careful not to let their egos get away from them. And that is where the danger lies.

Just because people do not ask for attention or recognition does not mean that they do not want it. On the contrary, they hunger for it, and when it is not forthcoming they are disappointed and hurt. Repeated disappointments give rise to frustration, and to social ill health. And this is a major problem in industry wherever more than a handful of people are employed.

Individually, each of these disturbed egos, when analyzed, is small, well-defined and, for the most part, easily corrected. Left alone, however, they tend to merge into a collective or organized unrest which bears little resemblance to the individual ills. Most of our labor legislation and organized labor demands are symptomatic of the desire to punish somebody for doing something, though nobody quite knows what it is. Certainly they

are not corrective in the sense that they restore dignity or get the recognition the individual desires so much.

It seems as though it is never possible to touch every base in this fast, hard-hitting game of industry. You see management, too, is human, just as much as the people who work under it. I am not excusing the members of management. They have their jobs because more is expected of them. Nevertheless, they do make mistakes. And I want to say right here that it is my opinion their mistakes come from trying to get something done rather than from shirking any responsibility.

Let's not forever be searching for the foibles and weaknesses of industrial managements. It's just as easy, and maybe more constructive, to pay a little attention to their ego, for management has contributed greatly to our advanced scale of living, individual comforts and national defense.

Probably the greatest economic and social benefits have come from our increased productivity, which has enabled us to produce so much more per hour of labor than other nations, and in the doing, pay our labor more. To this greater productivity labor itself has contributed very little. Most of the gain has come through better machinery and improved methods. Competition has enabled the consuming public to enjoy a large part of the cost savings through lower prices. In no place in the world do goods cost so little in terms of an hour's work, with the result that people's labor in this country brings home more bacon in the form of better living.

Happy for What They Have?

Does that make people any happier here than they are elsewhere—more thankful, at least, for what they have? I doubt it. I have a feeling that people are not so much contented with what they have as they are discontented with what they do not have.

In some ways, I rather agree with that way of looking at things. A healthy discontent keeps us striving to improve our position in life. From this striving upward comes improvement and progress. In our organization, for instance, we have organized the management group into profit improvement committees and imbued them with the desire to improve. In that light discontent can be constructive. But the discontent that drives people to change things is not always constructive, particularly when it gets into mass movements such as strikes, or riots, or wars.

The worker discontent in the midst of this material plenty has its root very largely in the very thing that has enabled him to wear good clothes, have a car, and own his own home. The very productivity that has brought labor more for an hour's work has been possible only through

standardized, mass production operations that minimize individuality.

We put a number of people on an assembly line, and the speed of the line is not that of the best but of the slowest. No line can have any better quality than that of the poorest person on the line. In the same way, a mass production machine is designed for so much output. Maybe on some machines a crew could speed for so much output. Maybe on some machines a crew could speed up the output, but if they did they would not necessarily improve over-all performance, because most mass operations are geared to a balanced flow of parts and components.

It's pretty difficult for an individual in such an operation to escape being an economic abstraction, unlesss there is a tie of some sort between management and employees that keeps the ego alive.

Belonging to a labor organization does not improve the human dignity. If anything it makes it worse because labor insists on mass action. It cannot abide individual action. The organization, not the individual, decides the wages, the hours, the working conditions and, in many places, who can work, and who is promoted, and who is let out. To the extent that these organizations are democratic, the individual has a voice, but the decision is not his. It is that of the majority.

The dignity of the worker is not something that can be improved by collective action. It can differ between plants manned by members of the same union, and it can differ between plants of the same company.

What we are dealing with here are attitudes. Part of it is the attitude of management, and part of it is the attitude of labor. In our company we recognize both.

Where, for instance, we have had manufacturing operations in cities with a very dense industrial population, we have encountered a working force that was more difficult to get close to on an individual basis than it would be in places where there was little or no industrial concentration.

It has been proven to us time and time again that the closer our management people and our labor live together, the better is the dignity of labor.

Decentralized Operation

Ours is a decentralized operation, employing in excess of 23,000 persons in plants and laboratories in some 30 places in eight states. We are credited, in fact, with being one of the pioneers in decentralization.

While it is true, as you can see from the figures I have just given you, that most of our operations are small—are in fact in small places—our philosophy of decentralization is not dispersion, but decentralized control and management.

At each of our operations we have a man who acts in the capacity of plant manager. He reports to a divisional general manager. We have seven divisions. Each divisional general manager runs his own show with full responsibility for production, sales, records and employment. That is to say, he runs his own show within a framework of corporate policy. In turn, he delegates authority and responsibility for local operation to the local plant manager. The local manager is the Company in his community and is so recognized.

What do you suppose that does for his ego? It has been our experience that responsibility has increased the stature of these men. They work harder, think better and get ahead faster once they know they are more or less on their own. Of course, mind you, we don't give these jobs to just anyone. Men have been spotted for these jobs long before they have gotten them. After all, you can give responsibility only to someone who has the capacity and aptitude.

These same men working in a large factory might be supervising the work of an equal, or even larger number of people, but they would be departmental superintendents—not managers. They would have the responsibility for getting the work out but not for selling it. They wouldn't be able to do any number of things that give a man standing in his community. A decentralized operation, such as I have been describing, gives dignity to local management.

But we can give just so much. The rest must be earned. We can clothe a manager with dignity but, unless he wears these clothes well, he will not be well-dressed. We believe the men know this, for as soon as they receive this responsibility they appear to be careful that they do not abuse it. They try to live up to the position we have given them, and that in itself is another big step up the ladder of success.

The hardest job a local manager has is to get the respect due his position in his own plant. That is something only he can do for himself. And this is what I sense our young managers have found out. The more understanding they show the people who work for them, the more respect they get. In other words, dignity breeds dignity.

In our concept of decentralization, the local manager becomes important to himself, to his employees and to his community. When the newspaper reporter calls, the manager doesn't have to get a release from the central executive office. He is accepted by the Chamber of Commerce and the service clubs as the head of another business. He doesn't have to get permission to give to or to engage in Community Chest, Red Cross or other local drives.

Practically every one of our numerous plant managers is an active member of Rotary, Kiwanis or the Lions. These men are taking leading

parts in fraternal orders, community drives, Y.M.C.A. Boy Scouts and political clubs. Among our plant managers, are bank directors, members of borough councils and members of any number of civic committees and groups.

Manager Lives With People

In a small plant, the manager has to live with his people. They go to the same church or lodge, their children to the same school. There is no separate social level, so that there is a closer personal bond between management and worker. The plant manager must get along with his people and, the more he is liked, the more the workers will try to help make him a success in the operation.

After all, one can't bowl on the same team with the plant manager, or one's wife be on the same church committee with his wife, or one's son dance with his daughter, and feel that there is any great class distinction. There can't be any such distinction, for workers and managers must live as neighbors. There is no specific area where either group lives. There can be no doubt but that the friendly relationship nurtured over the garden fence carries over into the job.

Under such circumstances, there can be no feeling of frustration because workers and management belong to the job—they are a team and it is, therefore, only natural for them to take an interest in the work. Thus, decentralization restores a working personality to labor, and a dignity. Work is once again fun and people are happy in their employment.

Communism can never take root where people are happy and contented.

People in small and medium-sized communities lead a much more natural and normal life than those in large cities. For one thing, they can get to work easily and quickly. The average for such travel to our small plants is between 10 and 20 minutes.

Instead of paying for their amusement, they make most of it themselves, and thus are more sociable. They can fish, and hunt, and work in their gardens. They can play ball or golf or tennis at their own club. There is so much they can do in their leisure time that is clean and wholesome.

In one of the counties near where we have a plant there are said to be more deer than inhabitants. It is not unusual for one of our people to go fishing after work and be back home in time to have the catch for supper.

In the larger industrial centers, there is less to do in one's leisure time, especially if one lives in a rented tenement or apartment. Knowing

few people in the neighborhood, the desire for company takes fellows to pool parlors and bars. Of course, small towns have these too, but they don't get the same patronage. How easy it is to gripe when you have nothing interesting to occupy your time? How easy it is under such conditions to get cockeyed ideas!

People are clean-minded if you put them in clean surroundings. People in smaller places have a greater respect for government, and for law and order. It may be because the form of government is simpler, or it may be because everybody knows everybody else, or it may be because they can't afford a large, paid municipal organization—whatever it is, people in smaller places have a greater sense of responsibility for civic affairs. For one thing, workers can participate in government. We have several such instances in our own operation. One man was mayor, several have been on a borough council and school board.

People take a greater interest in politics in smaller places and have an opportunity to be on the inside—maybe holding office in a party. Voting is a responsibility in a small place.

People also have a greater opportunity to work for the good of the community. Any number of our people have been on fund-raising committees, or in civic associations where they have been called on to do something.

Smaller Operations Preferred

Such activities build citizenship and dignity. People do not like to destroy that which they have worked for and are a part of.

In smaller plants, people are thrown closer together and have a better opportunity to understand the relationship of their work to the whole. Instead of their jobs being meaningless, dull routine, they can see that what they are doing is important. Their work becomes more interesting.

Some employees who have worked in both large and small plants have told us that they like the smaller operations because people are brought closer together and a more friendly atmosphere is created. With it, they say, they find a spirit of helpfulness, cooperation and fellowship. People can't feel any loss of occupational personality where friendliness is the rule.

With a close working relationship among employees and between workers and management, such as has been described, there is less room for misunderstanding. It has been our experience that labor relations, as a result, are on a much higher level than those in plants where management is far removed from the working force. The number of grievances is smaller and trouble arises less frequently.

Management having of necessity a greater respect for the workers as human beings, cannot help reflecting that point of view. Labor being quick to sense any such attitude, reacts accordingly by having a high regard and respect for the company, especially when they hear workers in other plants gripe about the indifference of the treatment they receive. Decentralization provides the mutual confidence that is necessary if we are to avert social disturbances.

While it is true that decentralization offers the manufacturer a fresh labor supply and one that can be checked more readily for references, it also offers people in smaller communities an opportunity to find gainful occupation without breaking up their homes. Thus, by moving into smaller places, industry is contributing to a better distribution of employment and to a better balance of market and economy between dense and less heavily populated areas.

However, plant locations should be picked selectively in areas where the supply of labor is not only adequate to the need but where the introduction of a plant will not produce a localized labor shortage of the type of people required.

Aside from the economic benefits to be gained from a well thought out program of decentralization, results to date indicate that it offers a practical means of re-establishing the dignity of the worker as an individual. It can develop a mutual respect between workers and management and give a new meaning to the responsibility of employment and the fun of work. It can give more enjoyment to leisure time. It can build citizenship and pride of government. It can be a powerful means for combating the industrial unrest and discontent on which Communism feeds.

Workers are human beings. They are the most important elements in industry. We must work and live with them. We must encourage them, lead them, inspire them. We must restore to them their individuality and personal dignity.

In that way and that way only will we protect the economic and social liberty that is basic to a democracy of free people.

Appointed: Dr. Philip R. Marvin as vice president of the Commonwealth Engineering Company of Ohio, Dayton 3, Ohio.

Egyptian Industry: To be studied by a group from Arthur D. Little, Inc., of Cambridge, Mass. The group left for Egypt in January.

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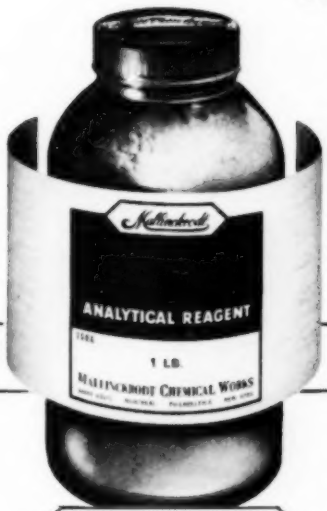

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Great Changes: Have taken place in education as well as industry since America entered the technological era, Dr. J. T. Rettaliata, president of Illinois Institute of Technology, Chicago 16, Ill., said recently in speaking before the Federation of Paint and Varnish Production Clubs.

The universities have responded to this demand for larger and larger facilities in science and engineering. "Yet they have tended to become divided into two groups. On one side are those in the technical field, with their emphasis on measureable quantities. On the other are those in the humanities and social sciences, centered on ethical and cultural standards.

"In the course of this development, technological institutions had a tendency to develop too narrow a view and to overlook social considerations. I am glad to say that this is being corrected. There is a definite trend toward broadening the educational background of the scientist and the engineer. Illinois Tech, with the others, has modified its curriculum to give our students in the technological fields more economics, more history, more sociology.

"But I wonder how broad a view students in the schools that emphasize the humanities and social sciences have of technical developments. I am afraid that in their curricula the part that technology plays in our lives is too often overlooked. I hope that they will take steps to repair these deficits where they exist in their programs, even as we in the technological schools are striving to get our programs into better balance."

Southwestward: Moves the center of this country's chemical industry, according to a study made public by William H. Ward, chairman of the Manufacturing Chemists' Association, Inc. The study shows that during the past two years, a majority of the new chemical plants have been built in the South, particularly in the states bordering the Gulf of Mexico, and in the Middle West.

To India: Dr. Benjamin D. Van Evera, F.A.I.C., coordinator of scientific activities at the George Washington University, Washington 6, D.C., on a technical mission aimed at aiding India's agricultural development. The project is under the sponsorship of the Committee on International Technologic Assistance of the National Academy of Sciences — National Research Council, as part of the Point Four program. Dr. Van Evera will spend about two months on a survey tour of fertilizer plants in India, Japan, Europe and the United States.

Changed: The name of the Culligan Zeolite Co., Northbrook, Ill., to Culligan, Inc.

COUNCIL

OFFICERS

President, Lincoln T. Work
President-elect, Donald B. Keyes
Secretary, Lloyd Van Doren
Treasurer, Frederick A. Hessel

COUNCILORS

John R. Bowman, *At-Large*
Emmett B. Carmichael, *Alabama Chapter*
C. C. Concannon, *At-Large*
M. L. Crossley, *At-Large*
T. R. Donlan, *New Jersey Chapter*
Gustav Egloff, *Chicago Chapter*
L. H. Flett, *Past President*
Milton Harris, *Washington Chapter*
M. J. Hiler, *Ohio Chapter*
L. B. Hitchcock, *At-Large*
H. O. Kauffmann, *Niagara Chapter*
M. J. Kelley, *New York Chapter*
R. H. Kienle, *At-Large*
Harold A. Levey, *Louisiana Chapter*
John H. Nair, *At-Large*
H. A. Neville, *At-Large*
Donald Price, *At-Large*
M. Sittenfield, *Pennsylvania Chapter*
Foster D. Snell, *Past President*
Raymond Stevens, *New England Chapter*
Manuel Tubis, *Los Angeles Chapter*
Florence E. Wall, *At-Large*
Albin Warth, *Baltimore Chapter*

National Council Meetings

Meetings of the AIC National Council are scheduled to be held at The Chemists' Club, 52 East 41st St., New York, N. Y., at 6:00 p.m., on the following dates:

March 11, 1953

April 8, 1953

May 11, 1953 (Philadelphia, Pa.)

January Meeting

The 286th meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held January 14, 1953, at 6:00 p.m., at The Chemists' Club, New York, N. Y. President Lincoln T. Work presided.

The following officers and councilors were present: J. R. Bowman, M. L. Crossley, T. R. Donlan, A. W. Fisher, Jr. (alternate), L. H. Flett, F. A. Hessel, M. J. Hiler, H. O. Kauffmann, M. J. Kelley, D. B. Keyes, J. H. Nair, H. A. Neville, M. Sittenfield, L. Van Doren, F. E. Wall, L. T. Work, K. M. Herstein, V. F. Kimball, and B. Sweedler, committee chairman, were present.

The minutes of the preceding meeting were approved.

The president reported that he had attended the December 4th meeting of the Pennsylvania Chapter at which the Honor Scroll was presented to Dr. P. A. Wells. He will attend the February 4th meeting of the Niagara Chapter at which Honorary AIC membership will be presented to R. Lindley Murray. He will also go to Chicago soon where he will discuss matters of concern to the Chicago Chapter.

President Work announced that Dr. R. E. Kirk will represent the AIC at the installation of the new president of the City College of New York.

Dr. Kelley, serving as secretary *pro-tem* during the early part of the meeting, reported that the INSTITUTE's membership now stands at 2572. He announced with deep regret the deaths of Dr. V. N. Ipatieff, F.A.I.C., on Nov. 29, 1952, and of Miss Emma Crandal, F.A.I.C.

The treasurer's reports were accepted.

President Work urged the Chapters to cooperate with Dr. Nair's Committee on Membership.

Dr. Work announced that the Los Angeles Chapter is planning on an AIC luncheon during the ACS meeting week in Los Angeles, Calif.

Mr. Nair, reporting for the Committee on Membership, informed the Council that lists from the Chapters will be checked against master lists in the AIC office. New members elected at the March Council Meeting will start their dues with the fiscal year beginning May first. A discussion of ways of bringing the work of the INSTITUTE more clearly to the attention of the Chapters followed. Professor Marsel will act as coordinator between Chapter membership activities and the AIC membership committee.

Dr. Keyes, chairman of the Committee on Manpower, discussed the present situation, and asked the INSTITUTE to cooperate with the other scientific societies, and the Council agreed to support these societies in their stand on scientific manpower.

Mr. Sittenfield reported for the Committee on Arrangements for the Annual Meeting to be held May 12th and 13th in Philadelphia. The final program is being prepared with Mr. Neidig, program chairman.

Mr. Sweedler presented suggested revisions of the Constitution and By-laws. The suggested changes were noted by Mr. Sweedler who asked the Councilors to send to him in writing their individual suggestions.

Mr. Donlan reported that the New Jersey Chapter will hold its next meeting on February 16th, jointly with the North Jersey Section of the American Chemical Society, with a panel on "How to Start Your Own Business." He reported that the educational committee of the Chapter has been assisting the State Teacher's College at Montclair, N. J., in its plans for a new scientific laboratory.

Mr. Hiler announced that the Annual Meeting of the Ohio Chapter will be held on the fourth Thursday in April, when the award scroll will be presented.

Mr. Herstein stated that the New York Chapter is holding an all-day symposium, January 15th, jointly with the New York Section of the American Chemical Society on the subject of public relations.

Dr. Fisher reported that the New England Chapter is planning a meeting later this spring.

Dr. Kauffmann stated that the February 4th meeting of the Niagara Chapter features the award of Honorary Membership to R. Lindley Murray and that the Chapter is especially interested in the manpower situation.

Mr. Sittenfield reported that the next meeting of the Pennsylvania Chapter will be held, February 5th, with Dr. Randolph Major, of Merck & Company, as the guest speaker.

The following new members were elected:

LIFE MEMBER

Hulse, Robert Edwin
Vice-President, National Distillers Products Corporation, 120 Broadway, New York 5, New York

FELLOWS

Cantwell, Nelson Henry
Instructor, Yale University, Department of Chemistry, New Haven, Connecticut

Galler, William
Chief Chemist, American Cystoscope Makers, Inc., 500 East 63rd Street, New York, New York

Hammerquist, William Lauran
Research Engineer, Research Department, Electro Manganese Corporation, Proctor Street, Knoxville, Tennessee

Hull, Richard Ostrander
President, Richard Ostrander Hull and Company, Inc., 1300 Parsons Court, Rocky River 16, Ohio

Micka, Jan
Director of Research, United States Biscuit Company of America, 1041 West Harrison Street, Chicago 7, Illinois

Parker, Edward A.
Technical Director and Secretary, Technic, Inc., 39 Snow Street, Box 965, Providence 1, Rhode Island

Peters, Fred Paul
Vice-President and Manager, Reinhold Publishing Division, Reinhold Publishing Corporation, 330 West 42nd Street, New York 36, New York

Rogers, Lockhart Burgess
Associate Professor of Chemistry, Massachusetts Institute of Technology, Cambridge, Massachusetts

Steadman, Albert
Chief Chemist, Allen B. Du Mont Laboratories, Inc., 750 Bloomfield Avenue, Clifton, New Jersey

Van Rysselberghe, Pierre
Professor of Chemistry, University of Oregon, Eugene, Oregon

Von Fuchs, George Hugo
Consultant, 1221 Garfield Avenue, Niagara Falls, New York

Waldo, Frank
Manager, Pittchlor Sales, Coordinator of Materials, Columbia-Southern Chemical Corporation, Washington, D. C.

Walker, Joseph Frederic
Chemical Research Supervisor, E. I. du Pont de Nemours and Company, Electrochemicals Department, Niagara Falls, New York

Winig, Jerome D.
Director of Control and Chief Chemist, The Bayer Company Division, 2144 East State Street, Trenton, New Jersey

Zachlin, Anthony Casimere
Research Chemist, Engineering Department, Willard Storage Battery Company, 246 East 131st Street, Cleveland, Ohio

MEMBERS

Jacknin, Bernard
Chemical Engineer, Development Department, Congoleum-Nairn Company, Kearny, New Jersey

Lauro, William Frederick
Research Analytical Chemist, Foster D. Snell, Inc., 29 West 15th Street, New York, New York

Ross, William Warren
Research Chemist, Armour and Company, 1425 West 42nd Street, Chicago, Illinois

Schneider, Harold W.
Chemist in Charge of Lubricating Oil Blending, Union Oil Company, 564 Mateo Street, Los Angeles 13, California

RAISED FROM MEMBER TO FELLOW

Gardner, Charles
Chemical Engineer, Advance Solvents and Chemical Corporation, 245 Fifth Avenue, New York, New York

Reichardt, Paul E.
Executive Assistant, Washington Gas Light Company, 1100 "H" Street, N.W., Washington 1, D. C.

Stupin, Peter J.
Research Director, Chemist, Research Department, Calavo Growers of California, 4833 Everett Avenue, Los Angeles 58, California

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Elected: J. Robert Bonnar, F.A.I.C., technical director of General Dyestuff Corporation, New York 14, N. Y., as president of the American Association of Textile Chemists and Colorists.

AIC Activities

C. P. Neidig, F.A.I.C.

Baltimore Chapter

Chairman, Maurice Siegel
Vice Chairman, Dr. Norris Matthews
Secretary-treasurer, J. Bernard Edmonds
Representative to National Council, Dr. Albin H. Warth
Reporter to The Chemist, Ralph W. Lamenzo

Sorbitol

At the November meeting of the Baltimore Chapter, held at Loyola College, Dr. Robert S. Rose, director of research, Atlas Powder Company, Wilmington, Del., spoke on "Sorbitol — an Example of Chemurgy."

"You may or may not be familiar with Chemurgy," Dr. Rose said, "the word is derived from the Greek words, Chimia and Ergon — 'Chemistry' and Work.'"

The *Chemurgic Digest,* published monthly by the National Farm Chemurgic Council, states, "Chemurgy is concerned with the upgrading and industrial utilization of farm grown raw materials, with discovery and development of new crops, and with profitable uses for agricultural residues." One of the most interesting aspects of this is the fact that raw materials from farm sources are renewable, in contrast to limestone, coal, iron, copper, aluminum, natural gas and petroleum.

The renewable resource which is the raw material for sorbitol is corn, the major grain crop in this country. In 1952 it is estimated that more than 3-1/3 billion bushels of corn were harvested from nearly 87-million acres, an area greater than that of New York, New Jersey, Pennsylvania, Delaware, and Maryland. The production of this crop can be likened to chemical production. The energy comes from the sun, the basic raw materials come from water, air, and carbon dioxide. The soil provides the processing equipment and processing chemicals. Conversion costs are represented by the farmers' labor.

Slides were shown of a few of the uses of corn: 80-85 per cent goes to fatten cattle and pigs; alcoholic beverages — this derivative is very interesting to some people! Industrial and food use: Starch; pies, puddings; textiles; food, corn flakes, corn bread, hushpuppies; corn syrup, Dextrin in adhesives; corn oil for salad oils; corn steep liquor as nutrient for growing antibiotics; dextrose, corn sugar, widely used in baking products, candy, soft drinks, jams, preserves; sorbitol made from corn sugar by the addition of hydrogen.

Twenty years ago sorbitol was a rare chemical; a pound of it, if obtainable, would have cost several hundred dollars. Sorbitol is now a chemical commodity, and a 70 per cent solution now shipped in tank car quantities costs about 15 cents per pound.

Sorbitol is not new and was not created by chemical synthesis but is a naturally occurring substance, found in many fruits and berries, 10-12 per cent algae, and tobacco. Sorbitol was first isolated and identified by Boussingault in 1872, who isolated it from the juice of mountain ash berries.

Sorbitol is a six-carbon sugar or hexose. There are many six-carbon sugars, and likewise many hexitols possible, ten in fact which are isomers and differ in their structural configuration.

Slides showing the various steps in the manufacture, as well as specialized equipment, of sorbitol were shown, and reprints were exhibited from the *Journal of Industrial and Engineering Chemistry,* and from the March 1952 issue of *Chemical Engineering,* describing the manufacture of sorbitol under the trade name of "Sorbo," by the Atlas plant near Wilmington, Del.

Mannitol is made concurrently with sorbitol by reduction of inverted sucrose. Invert sugar is one part glucose which goes to sorbitol, and one part of fructose. Since fructose is a keto sugar with the carboxyl group in the 2-position, when hydrogenated, the resulting hydroxyl can appear on right as well as on the left. Fructose therefore yields 50 per cent sorbitol and 50 per cent mannitol, so the reduction of invert sugar gives a product consisting of 25 per cent mannitol and 75 per cent sorbitol. In our process, after ion exchange treatment, the mannitol is crystallized out. A solution of sorbitol is saturated at 20° C. at about 16 per cent concentration. However, the solubility of mannitol in sorbitol solution is decreased so that a satisfactory separation may be made.

The melting point of mannitol is 166°. Note two forms of sorbitol, stable form, melting point 97, unstable 91. 97° crystals are obtained from a 15 per cent solution, 91° crystals from a 3 per cent solution.

Certain materials, such as borax or ammonium molybdate, will boost optical activity. In the case of borax, this is probably due to a complex. Polyhydric alcohols form complexes with boric acid, changing it to a relatively strong acid. In the case of mannitol, two crystalline mannitol monoborates and one dimetaborate have been isolated. No crystalline sorbitol borates have been isolated. Neutralized sorbitol borates yield water soluble resins.

The polymorphism of sorbitol has been studied in the Atlas laboratory by means of freezing point and cooling curves. Methods for analysis may be worked out by reactions of the hydroxyl groups: (1) Esterification, (2) Etherification, and (3) Reaction with aldehydes and ketones to form cyclic compounds.

One of our important vitamins is derived from sorbitol. It is vitamin C. Starting with sorbitol and going through a conversion process which involves sorbose, sorbose diacetonate, hydrolyzation, heat and lactonization to give ascorbic acid.

Other uses of sorbitol are found in the radio, automobile and industrial finishing fields; also in tobacco, glue, printers rollers, cork and gasket composition. In cosmetics the humectant and emollient properties are utilized in creams and lotions. Toothpastes are kept from drying out by it, likewise a great deal of sorbitol finds its way into candies, marshmallows, diabetic foods, cookies, jams, etc.

Then too, there is the field of surface active agents found in cosmetics, pharmaceuticals, textile finishes, food, industrial uses, detergents, cutting oils, agricultural emulsions, insecticides, and herbicides.

The steps from corn to glucose to sorbitol and derivatives show how far-reaching this development has become. Sorbitol is a good example of chemurgy.

New York Chapter

Chairman, Karl M. Herstein
Vice Chairman, S. F. Coneybear
Secretary-treasurer, Richard L. Moore
Representative to National Council, Dr. Maurice J. Kelley

Your First Job

The New York Chapter held a Young Chemists' Meeting, December 11th, at Hans Jaeger's restaurant, New York, N. Y. Though it was a blustery, stormy evening, the worst of the season, the attendance was nearly a hundred.

Dr. Gordon P. Whitcomb, assistant personnel director of American Cyanamid Corporation, led the panel discussion with "How to Locate the Opening," and the "Interviewer's Point of View." He advised graduating students to consult with the placement directors of their colleges; to read the "positions offered" columns of the technical magazines, such as *Chemical and Engineering News;* to talk to those who graduated ahead of them and who are now employed; to consult with friends, relatives, and the company representatives to the colleges. They should also write letters to the firms for which they would like to work and make personal visits to the personnel offices of the companies in their vicinity.

"Industry", Dr. Whitcomb said, "looks for a person well-grounded in chemistry, mathematics, physics, and the humanities." Once in the laboratory, teamwork counts. Working with experienced men very markedly improves the new employee's knowledge and soon the newcomer can make the work of the experienced chemist much lighter.

A student should obtain the doctor's degree if he can possibly do so, particularly if he wants to spend the rest of his life in the field of chemistry.

Some chemists start in the production

control laboratory with analysis of products and intermediates. This is not a satisfactory career position, but it is excellent training for the new chemist. In the production-supervision end, the chemist may be a foreman in training, or deal with labor, or with personnel. In the beginning the new chemist will probably have to start in a laboratory position, but other positions stem from this beginning. After a year, it is possible to start as an administrative assistant, or in the patent department, or in library researching, or technical sales, or purchasing, or field service work. For these, it is important to know both chemistry and people. Sales, by and large, is not the only place to make money. Eventually, the chemist can go to top management, but there is room for only one at the very top.

The employer, Dr. Whitcomb continued, looks for (1) Productivity — Is the employee a hard worker? Can he get things done? (2) Acceptance of responsibility — Plan, system. (3) Initiative. (4) Knowledge of the field — academic record. Research and development positions need top records. Other positions require only a respectable average of grades. (5) Judgment and Common Sense — These will grow during the years. (6) Teamwork — Learn how to get along with other people and to share credit. (7) Integrity and Honesty. (8) Leadership potential. (9) Personal vigor — Health and mental alertness.

There are cases where young employees have to be discharged. One out of ten who lose positions are discharged for lack of specific skill. But the other ninety per cent lose their positions for the following reasons: (1) Carelessness, (2) non-cooperation, (3) lazyness, (4) excessive absences without good cause, (5) dishonesty. Certain deficiencies also prevent promotion. Among these are lack of initiative; lack of ambition; non-cooperation, and lazyness.

"The Applicant's Approach" was the topic presented by Ward Jackson, general manager of Commercial Solvents Corporation. "Getting a job," he stated, "is a selling job. You are selling yourself." First, know your market. Don't tell an interviewer looking for sales trainees that you want to be a research chemist. (2) Package your product (yourself) neatly, with clean shirt, shoes shined, no spots on the jacket. (3) Make your product available. An appointment at four means four o'clock. Get there on time and plan so that you avoid rushing. (4) Don't oversell with false advertising. Don't be smart nor a wisecracker. Sometimes the interviewer's attempt to make the applicant feel at ease is misunderstood. Be truthful. (5) Have a well-prepared brochure (a resume). In it list all of your background and activities that are applicable. (6) Don't mumble. Speak clearly. (7) Remember that the world does not owe you a living. You will have to work hard for it. (8) Don't hold false values. You are not interested in pension plans, as a rule, on your first job. The salaries paid are based on the going rate in the industry, and the range of difference between companies is within $25.00. You should be most interested in the possibility of your growth and development. Few young people are worth their salaries the first year.

The problem of race, religion, and creed does exist. It is least of all a problem in the research laboratory where a chemist is chosen for his record of personal achievement in the field. In sales positions, salesmen are often selected according to the type of buyer whom they will serve. In general, the industry is ninety per cent free of prejudice and it would be well to stay away from the firms that are not; they are not good bets for anyone.

During the interview, look the interviewer in the eye and be sold on yourself so that you can answer questions quietly and confidently.

Dr. Donald Price, technical director of Oakite Products, spoke on "Is This The Job for You?" His paper has been promised for publication in a later issue of THE CHEMIST.

Chicago Chapter

Chairman, Dr. B. S. Friedman
Chairman-elect, H. F. Schwarz
Vice Chairman, Mary Alexander
Secretary-treasurer, W. Jacobson
Representative to National Council, Dr. Gustav Egloff

Do You Want Your Son to be a Chemist?

The Chicago Chapter, AIC, met January 16th at the Chicago Engineer's Club, Chicago, to hear Dr. Otto Eisenschiml speak on "Do You Want Your Son to Be a Chemist?" Some seventy persons attended the meeting, their curiosity aroused by a provocative announcement that contained such paragraphs as,

"How about it, Father Chemist, is your son doing as well as his playmate whose dad is a physician or electronics engineer? . . . Will he have to wash dishes for his meals or fire furnaces, instead of participating in constructive extra-curricular activities? Oh, you say that will not hurt him — you had to wait on tables yourself. If developed self-reliance and good work habits (but it did not help you to make contacts or develop socially.) . . .

"And you, Mamma Chemist . . . You say your neighbor's husband spent the same number of years in school as did your husband, except that he served an additional year as interne. However, her husband did not have to write a thesis or make an original scientific contribution. He did not have to pass language exams in French and German, survive preliminary exams, or face a committee of professors for an oral exam, as did your husband. His grade average was B while your husband had to have an A— or B+ average . . .

"Well, Husband Chemist, each month you bring home what's left of a check for $600. Ten years have passed since you got your Ph.D. — ten years in which you spent evening hours reading journals and participating in professional as well as civic activities. You started at $300 a month and earned yearly merit increases of 5 to 10 per cent. Yet you're now earning only 20 per cent more than a starting Ph.D.!" . . .

Dr. Eisenschiml stated that the professional and the economic status can never be separated, but that he was limiting his talk to the professional side only.

In 1919 no chemist could be drafted; in 1941 some 1500 chemists were drafted, for, among other things, emptying bedpans in hospitals. Whose fault is this? Why did the reputation of the chemist deteriorate during the period between the two wars? The fault is to be found in those who publicize chemistry, not chemists. That chemists do not get recognition by the 157-million United States citizens is not due to animosity but due to ignorance.

There are only two monuments to chemists in Chicago, but the chemists themselves do not know about them. The chemist must be presented to the public like a detective story; this has been done twice, with Pasteur and with Madame Curie.

Professional organizations and local section publications should remember to foster professional recognition, and continuously keep this goal in mind to promote constant activity toward that end. The Chicago and New York chapters of the INSTITUTE have notably featured professional activities.

Application blanks for employment hurt the dignity of the profession. Dr. Vandeveer Voorhees was the only successful fighter against these, but he was not adequately supported by chemists.

The most idiotic Government regulation which chemists had contact with in World War II was TTO 257; it was full of "provided however that . . ."

Chemists need a Vigilance Committee, to protest, for example, if erroneous or malicious statements appear in the public press.

Human beings are subdivided into six classes: (1) The creative genii, (2) the creative workers; (3) the people who create by hand, (4) the people who work, but don't create, (5) the parasites, (6) the criminals.. Here is an example for each of these classes: (1) Beethoven, (2) chemists, (3) bricklayers, (4) streetcar conductors, (5) real estate agents, (6) make your own example.

In summary, Dr. Eisenschiml talked not about finances, but about respect and self-respect. The discussion that followed can be summarized: If you want something done, do it yourself.

Washington Chapter

Chairman, Milton Harris
Vice Chairman, Paul E. Reichardt
Secretary, Wesley R. Koster
Treasurer, John F. Williams
Representative to National Council, Milton Harris

Report from Europe

On January 14th, the monthly luncheon of the Chapter was held at Bonat's Restaurant, Washington, D.C.

Chairman Harris announced that Dr. Arno C. Fieldner, chief fuels technologist of the Bureau of Mines, will receive the Chapter's Honor Scroll this year. Preparations for this award are progressing rapidly. In view of Dr. Harry Fisher's departure to California, Arthur Schroder agreed to take the responsibility of the Award Committee's preparation for the dinner.

Contributing editor to THE CHEMIST, Dr. Julian Smith, reported that he had prospects for two articles to be submitted to the magazine by Chapter members at a later, unspecified, date. He will welcome any further contributions.

Dr. Harris read a communication from national headquarters, suggesting that as part of a nationwide desire to interest a larger number of chemists in the activities of the INSTITUTE, a membership committee be appointed to encourage the Chapter's growth. Dr. R. E. Rostenbach was named as chairman of that committee.

Dr. Harris then described his experience in Europe in November while travelling on a business trip in Britain and on the Continent. His observations of the state of mind of various European nationals, and their attitudes toward international affairs, were of great interest. Inadequacy of time available for extended discussion brought the meeting to adjournment somewhat prematurely from the standpoint of the interest aroused.

—W. R. KOSTER, F.A.I.C.

Will You Come?

Feb. 4, 1953. Niagara Chapter. Hotel Niagara, Niagara Falls, N. Y. Presentaton of Honorary Membership in the AIC to R. Lindley Murray, president of Hooker Electrochemical Co. Dr. Lincoln T. Work will make the presentation.

Feb. 5, 1953. Pennsylvania Chapter. Dr. Randolph T. Major, vice-president and scientific director, Merck and Company, will speak on "The Research Chemist in the Pharmaceutical and Medicinal Chemical Industry."

Feb. 11, 1953. Washington Chapter Luncheon. Bonat's Restaurant, Washington, D.C. Speaker: Dr. Wallace R. Brode, associate director, National Bureau of Standards, "Some Problems of Government in Research."

Feb. 16, 1953. New Jersey Chapter jointly with North Jersey Section of the American Chemical Society. Speaker: Dr. George Royer, F.A.I.C., on "American Chemical Society Professional Activities." Topical Group Meetings. Panel discussion on "How to Start Your Own Business," sponsored by the New Jersey Chapter and the Industrial and Engineering Group.

March 1953. New York Chapter. Student Medal Awards. Place, date and program to be announced.

May 7, 1953. Pennsylvania Chapter. Dr. Sidney D. Kirkpatrick, editorial director, *Chemical Engineering*, will speak on "The Rocky Road of the Chemical Professor." At this meeting Student Medals will be awarded. For information and reservations: Dr. V. V. Bellino, Barrett Div., Allied Chemical & Dye Corp., Philadelphia 37, Pa. (JE-3-3000).

May 12-13, 1953. Annual Meeting of The American Institute of Chemists. Benjamin Franklin Hotel, Philadelphia, Pa. Presentation of A.I.C. Gold Medal to Dr. J. C. Warner, president of Carnegie Institute of Technology. Committee on Arrangements: Marcus Sittenfield, C. P. Neidig, and Hillary Robinette.

May—, 1953. New York Chapter. Presentation of Honor Scroll. Date, place, and program to be announced.

For Your Library

Fluorine and Its Compounds

By R. N. Haszeldine and A. G. Sharpe. John Wiley & Sons, Inc. 154 *pp.* 4¼ *x* 6¾". $1.75.

A remarkably concise assemblage of data on fluorine compounds, inorganic and organic. Their use in polymers, plastics, dyestuffs is briefly discussed. An extensive bibliography is appended.

—Dr. John A. Steffens, F.A.I.C.

Dynamic Aspects of Biochemistry

Revised Edition. By Ernest Baldwin. Cambridge University Press. 5¾" *x* 9¼", 545 *pp.* $5.00.

This is a biochemistry of metabolism, with excellent elaboration of the enzyme systems. The physiological chemistry is elucidated in a most heuristic manner. On the whole, an advanced text but lucidly written.

—Dr. John A. Steffens, F.A.I.C.

Pulp and Paper

Chemistry and Chemical Technology. Vol. I—Pulping and Paper Making. By James P. Casey, Director Technical Service, A. E. Staley Mfg. Co. Interscience Publishers, Inc. 795 *pp.* $15.00.

This is primarily a study of pulp and paper from a chemist's point of view. Starting with chapters on the chemistry of cellulose and hemicellulose and lignin, the author discusses pulpwood, pulping, bleaching, fiber preparation, nature of fiber bonding, sheet formation, filling and loading, internal sizing, surface sizing, wet strength, coloring, as well as microbiology and water as applied to pulping and paper. The book is clearly written and documentation is ample and includes even 1950 and 1951 references. A valuable addition to the library or anyone interested in paper, whether as producer or user.

Dr. Frederick A. Heseel, F.A.I.C.

Russia's Lomonosov

By Boris N. Menshutkin. Princeton University Press. 1952. 8¾" x 5¾". $4.00.

There is an unusually large number of angles from which this book appears of interest. The reviewer recalls having been present at the annual meeting of the American Chemical Society in Washington in 1911, at which the incoming president and later his first professor of chemistry, Alexander Smith, made Lomonosov the subject of his inaugural address.

The book presents a fascinating picture of life in Russia in the middle of the 18th century and the conditions under which a scientist labored at that time. It is discernable that even in the treatment of a historical subject, the necessity of placating the Kremlin has colored the writing to some extent. Then there is the philosophical question which in elementary courses in philosophy is phrased: "Does a tree falling in an uninhabited forest make a noise?"—In other words, it is possible to glean from Lomonosov's writing that in a qualitative manner he anticipated many of the more recent developments in physical chemistry. However, his biographer, Boris N. Menshutkin, indicates that this anticipation by Lomonosov—chiefly on account of lack of publication—had no influence on the develop-

ment of chemical science in the Western world.

Finally, we can only marvel at the personality of Lomonosov, who, starting from the most unpromising beginnings, working under primitive conditions, and in almost complete isolation from the entire body of Western science, and compelled constantly to divert his energies to protect his position in an intriguing, autocratic and theocratic governmental organization, was able by sheer force of intellect to ideate as much as he did of later accepted chemical theory. To all of us who are used to freedom of thought, possibly excessive freedom of publication, and frequent meetings with our contemporaries and co-workers, this book presents a picture of an entirely opposed way of life which is fascinating.

—Karl M. Herstein, F.A.I.C.

The Lipids

Their Chemistry and Biochemistry. Vol. I —Chemistry, by Harry J. Deuel, Dean, Graduate School; Prof. Biochemistry, University of Southern California. Interscience Publishers, Inc. 982 *pp.* $18.50.

A well-written and documented study of the fatty acids, waxes, higher alcohols, including sterols, phosphatides, and cerebrosides, carotenoids, vitamins A, D, E and K, found in animal and vegetal life. The author has included, besides the usual ones of author and subject, thorough, and for this reviewer very useful, botanical and zoological indices.

This book should be of interest not only to the biochemist but also to anyone working in such field as soaps, paints, medicinals, etc.

—Dr. Frederick A. Hessel, F.A.I.C.

Heterocyclic Compounds

Vol. 4—Quinoline, Isoquinoline, and Their Benzo Derivatives. Edited by Robert C. Elderfield, University of Michigan. John Wiley & Sons, Inc. 1952. 675 *pp.* $17.00.

Because of the enormous amount of literature on quinoline the author of this practical volume has limited his presentation to general principles and type reactions, citing those references which may be consulted when broad surveys of specific areas in the field are desired.

In the case of isoquinoline, a more detailed presentation has been made of the alkaloids because so much of the chemistry of isoquinoline has been developed from the study of alkaloids. Few of the derivatives of these two parent compounds, acridine and phenanthridine, have been treated in greater detail than the remaining benzoquinolines.

The European system of nomenclature has been used throughout but alternate systems have been indicated where conflicts exist.

The book, clearly printed and well-indexed, will prove of real use.

—Dr. Frederick A. Hessel, F.A.I.C.

Chemical Books Abroad

RUDOLPH SEIDEN, F.A.I.C.

Verlag R. Oldenbourg, Munich: *Gastafeln,* by Horst Brueckner; 2nd ed., 222 pp. (15 ill.); DM 24.50.—A standard work which should prove of tremendous value to chemists engaged in research or industry, who work with gases, particularly the ones used as fuel. The 5 main chapters contain numerous tables and laws which deal with the composition of gaseous as well as liquid and solid fuels and with their physical, thermodynamic, and technical properties.

Apollonia-Verlag, Basel: *Die Vitamine,* by W. F. Winkelmann; 2nd ed., 318 pp.; paper covers, Sfr. 8.30.—An illustrated popular-scientific discussion of the vitamins, their history, properties, occurrence, synthesis, action in the organism, deficiency diseases and their treatment. Special chapters are dedicated to the vitamin-enrichment of food and beverages and to the value of vitamins for the nutrition of

animals. Those of the many tables of the book which give the latest figures of the vitamin content of hundreds of foodstuffs are especially interesting and of practical value.

Longmans, Green & Co., New York 3: *Dictionary of Scientific and Technical Words*, by W. E. Flood and M. West; 1952, 397 pp. (1300 ill.); $2.25.—This explaining and pronouncing dictionary of 10,000 scientific and technical words is illustrated with 1,300 pictures and diagrams and written in a manner which is understandable to anyone with little or no knowledge of the particular subject. Everyone can easily comprehend the meaning of the words alkaline, ampere, benzene ring, electron, gyroscope, half-hitch, Huygens' principle, hydrocarbon, spore, volt, etc.

Oliver & Boyd, Edinburgh: *An Introduction to Veterinary Therapeutics*, by G. F. Boddie; 1952, 196 pp.; 15 s.—This new work presents in a compact form the elements of materia medica and the principles of therapeutics, with emphasis on the action of modern drugs and biologics on the various systems of the body and the application of these findings to the control of animal diseases.

Dr. Alfred Huethig Verlag, Heidelberg: *Internationaler Kodex der aetherischen Oele*, by Arno Mueller; 1952, 249 pp.; DM 24.—An encyclopedia of ethereal oils, their more important physical properties and constants, chemical composition, industrial uses, and other valuable information, including a dictionary of the Latin, French and English names. This and the arrangement of much of the text in form of tables make Mueller's new reference book useful also for those who do not read German.

Springer Verlag, Berlin W35: *Aromatische Kohlenwasserstoffe: Polycyclische Systeme*, by E. Clar; 2nd ed., 481 pp. (138 ill.); DM 69.—This well-known monograph on polycyclic aromatic hydrocarbons and their derivatives contains the most complete and up-to-date mass of information available. This is particularly true of the investigations of biological properties and of the new X-ray crystallographic measurements and ultra-violet absorption

curves, which so greatly contribute to the interpretation of the fine details of complicated aromatic structures • *Die Hormone*, by Rudolf Abderhalden; 203 pp. (46 ill.); DM 29.70.—A thorough review of the physiology of the hormones as a prerequisite of rational hormone therapy. The author is to be congratulated on compiling so thoroughly the well-selected data from hundreds of literature sources, and it is noteworthy that most of them originated not in Europe, but in America which seemingly has become the center of modern endocrinology. • *Angewandte Radioaktivitaet*, by K. E. Zimen; 1952, 124 pp. (45 ill., 1 table); DM 18.80.—This is a masterly treatment of a most timely subject: applied radioactivity. The author gives in word, pictures, and tables all the necessary information for the understanding of the theory of radioactivity and of the uses of isotopes in biology, medicine, chemistry, physics, and industry.

Vandenhoeck & Ruprecht, Goettingen: *Kurzes Handbuch der Chemie*, 1, by Waldemar Koglin, 1951, 432 pp., DM 39.50. The first volume of his 5-volume encyclopedia lists 6583 keywords—from A to Bixin (including numerous cross references). While many entries require only one to ten lines, the more important ones contain many valuable tables in the text; e.g., the chapter on Ammoniak (ammonia) runs to 7½ pages; Anilin (aniline) to 2½ pages and its derivatives to 7½ pages. To be able to incorporate a wealth of chemical and physical data, the author employs various symbols and abbreviations which permit the use of the book also by those who do not understand German; besides, the work contains the French and English synonyms of each chemical compound listed.

Opportunities

Doris Eager, M.A.I.C.

Chemists Available

Sales Executive: 13 years successful experience professional service executive sales, and advertising. Age 39. Ethical pharmaceuticals. Box 22, THE CHEMIST.

Patent Attorney: Skilled solicitor of mechanical and chemical applications. Some experience in infringement trials, general law, and organic research. Doctorate training in organic chemistry. Private practice, 6 years diversified patent experience. Desires connection with corporation. Box 24, THE CHEMIST.

Chemist, Food Technologist: B. S. & post-graduate work. 16 years varied experience in food industry in research, development, and production. Prefer administrative, liaison or technical service activity utilizing background and experience. Box 26, THE CHEMIST.

Organic Chemist: Ph.D. 1945, F.A.I.C. Training and experience in organic medicinals and pharmaceuticals including formulation work from laboratory through full scale production. Interested only in positions of responsibility. Age 33, family. Box 28, THE CHEMIST.

Positions Available

Wanted Chemists: Ph.D. for group leader, 1-3 years industrial experience for organic development laboratory.

B.Sc. or M.S. Organic major. 0-5 years industrial research for development laboratory or pilot plant.

These positions are for medium-sized old established, progressive, expanding organic chemical mfr. Location Williamsport, Pa. Interviews in New York City. Compensation: Prevailing salaries with yearly bonus and with good chance for advancement. Box 21, THE CHEMIST.

Chemist: Who knows materials used in manufacture of electrical equipment for firm in California. Emphasis on practical ability. Salary open. Box 23, THE CHEMIST.

Research Director: Doctorate in physics or physical chemistry. Must have broad administrative experience as well as demonstrated research leadership. Mid-forties. Location East. Approximately $20,000. Box 25, THE CHEMIST.

Laboratory Space: Consulting Chemist will share well-equipped laboratory. Private office available. Excellent location mid-town, N. Y. City. Call CH 4-5271, or Box 27, THE CHEMIST.

New Fellowships: Offered by the Institute of Gas Technology, affiliate of Illinois Institute of Technology. Two programs are available for graduate students preparing for careers in the gas industry. One offers the M.S. degree in mechanical or chemical engineering in fifteen months; the other, the master of gas technology degree in two years. Application forms may be obtained from the director of the Institute of Gas Technology, 17 W. 34th St., Technology Center, Chicago 16, Ill.

New Scholarships: Two for graduate study in the academic year 1953-54, to be awarded by Central Scientific Company, 1700 Irving Park Road, Chicago 13, Ill., to university students majoring in physical sciences and engineering. The scholarships are limited to citizens of the U.S., and include a $1000-award to a student working for the M.S. degree and $1500 to a student working for the doctor's degree. Students should apply in writing not later than April 15th to the Scholarship Committee of the company at the address above, giving school chosen for graduate study, courses contemplated, description of the research problem, and a transcript of college credits.

Forecast: A marked upswing in the production of phenolic resin for the foundry industry to continue through and beyond 1957. Robert K. Mueller, general manager of Monsanto Chemical Company's Plastics Div., estimated that recent developments in casting procedures assure an industry-wide production volume in phenolic resins that will be nearly seventeen times the 1952 figures.

Career Conference: The closed TV Circuit System in eight theaters of Greater New York will be used for the first time as an educational medium for transmitting the "Scientific and Engineering Career Conference" to high school students on Saturday, March 21st, at 10:00 a.m., John Kotrady, F.A.I.C., of The Texas Company, general chairman of the Conference, announced.

The Technical Societies Council of New York, sponsors of the event, feel that televising the Conference on the "Big Screen" in the theaters will enable them to reach the greater preponderance of the 35,000 science students now attending the high schools in greater New York. The purpose of the Conference is to give science students as much information as possible about a career in science and engineering. The acute shortage

of chemists and engineers in our industries and universities stimulated the Conference idea.

Dr. Lloyd Berkner, president, Associated Universities, responsible for the operation of Brookhaven National Laboratories, will present "The Future of a Career in Science and Engineering." Dr. Charles Selzer, superintendent of Public Schools, Dumont, N. J., will talk on "How to Choose a Career in Science and Engineering." In the background of these two talks will be the TV cameras focusing their lenses on live chemical and engineering demonstrations and pictorial presentations of current work now in progress in these fields.

Dr. Henry Heald, chancellor of the New York University, and Dr. William Jansen, superintendent of schools, New York City Board of Education, will open the show.

At the conclusion of the TV show, twenty career workshops in the fields of chemistry and engineering will be open to the students at New York University, Washington Square. Each workshop will be guided by two scientists, one from the field of education, the other from industry.

Oil Discovery Celebration: To be held April 18th at Williston, North Dakota. Dr. Robert E. Wilson, chairman of the board of Standard Oil Company (Indiana) will speak.

Formed: A general research organization for Olin Industries, Inc. The organization will conduct basic research and work with the eight Olin manufacturing divisions on long range and specialized research programs. Laboratories have been established at New Haven, Conn., and East Alton, Ill., staffed by forty-five scientists. Dr. Herman Bruson, F.A.I.C., has been named as head of organic chemical research. He was formerly manager of the polymer laboratory of Industrial Rayon Corporation.

Solved: "Air pollution problems before they arise" by New York University engineers. Dr. Harold K. Work, F.A.I.C., director of the Research Division of the university's College of Engineering, and R. C. Roe, president of Burns & Roe, Inc., announced that terrain-model tests just completed will make it possible to increase the generating capacity of the Hudson Station of the Rockland Light and Power Company, at Tomkins Cove, N. Y., without increasing air pollution.

Appointed: By Eclipse Fuel Engineering Co., Rockford, Ill., General Combustion Co., 339 Brown Marx Building, Birmingham 3, Alabama, as its new district representative covering the states of Alabama and Northwestern Florida.

Something New

"Silver Recovery Unit For Hypo." Information. Oscar Fisher Co., Inc., 1000 North Division St., Peekskill, N. Y.

"Precision Torque Balances." Information. Ohaus Scale Corp., 1050 Commerce Ave., Union, N. J.

"Dual Purpose Bath Clamp." Information. Labline, Inc., 217 North Desplaines St., Chicago 6, Ill.

"Lithium Hydroxystearate." Technical Service Bulletin, G-3. Witco Chemical Company, 295 Madison Ave., New York 17, N. Y.

"Unitized Bath System." Bulletin. Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

"Lance Apparatus News." Bulletin. Arthur S. LaPine and Co., 6001 South Knox Ave., Chicago 29, Ill.

"MSA Aromatic Hydrocarbon Detector." Information. Mine Safety Appliances Co., Pittsburgh, Pa.

"The Chayen Process for the Continuous Degreasing of Bone." Bulletin No. 1272. Sharples Corp., 2300 Westmoreland St., Philadelphia 40, Pa.

"New Vacuum Blanket Printer." Information. Peerless Photo Products, Inc., Shoreham, L. I., N. Y.

"New Burdett Line Burner." Information. D. C. Scheele, Burdett Mfg. Co., 3433 Madison St., Chicago 24, Ill.

"New Type J Thermocouple Assembly." Information. Minneapolis-Honeywell Regulator Co., Wayne and Windrim Avenues, Philadelphia 44, Pa.

"Facts and Figures on Three Powerful X-Ray Tools for Non-Destructive Analysis." Booklet. North American Philips Co., Inc., 750 S. Fulton Ave., Mount Vernon, N. Y.

"Emery Vegetable Type Fatty Acids." Information. Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio.

"Meta Substituted Phenols for Dye Industry." Information. Chemical Division, Irvington Varnish and Insulator Co., Irvington, N. J.

"Cachalot Fatty Alcohols." Bulletin. M. Michel and Co., Inc., 90 Broad St., New York 4, N. Y.

"New Recirculating Valve." Information. Ardee Manufacturing Co., 840 N. Seward St., Los Angeles 38, Calif.

"Cast Optics." Catalog. Cast Optics Corp., Riverside, Conn.

"p-Toluenesulfonic Acid." Technical bulletin. Smith-New York Co., Inc., Freeport, N. Y.

"New Electrode Rapping System." Bulletin. Research Corp., Bound Brook, N. J.

"Bulletins, F-7819 and F-7427 Describing Dynel." Textile Fibers Dept., Carbide and Carbon Chemicals Co., 30 East 42nd St., New York 17, N. Y.

"1952 Edition RLM Standard Specifications for Industrial Lighting Units." Book. RLM Standards Institute, 326 Madison St., Chicago 6, Ill.

"Teflon Molding." Information. R. M. Gray, Sparta Heat-Treat Co., Plastics Division, East Sparta, Ohio.

"Carbon and Alloy Steel Castings." Manual No. 86. Steel Founders Society of America, 920 Midland Building, Cleveland 15, Ohio.

The Dark Ages: Would return again if there were a moratorium on scientific progress for a period even as short as fifty years, Dr. Charles Allen Thomas, Hon. AIC, president of Monsanto Chemical Co., said when he accepted the Perkin Medal of the American Section of the Society of Chemical Industry, January 16th, in New York, N. Y.

"What would happen with a fifty-year world moratorium on science?" In the field of health, there would be no hope for finding a solution to the common cold, to polio, to hypertension, to mental illness, or to cancer, and "our present drugs would gradually become less effective since germs have a way of building a tolerance for medicines." There would also come a constant decline in the number of doctors, who "without the spur of research, may lose interest in going into the medical profession."

Without scientific progress, there would be no change in cars, household appliances and other consumer durable goods. Since the greatest incentive that leads the consumer to trade capital for these goods is the incentive of change, it could be expected that the loss of technology in this field could wreck our entire economy. The terrific resulting unemployment problem could result in a violent revolution in this country which could drive it into a completely totalitarian state.

"With a moratorium on science, how would we compete with the hordes of insects that would appear to ravage our crops?" . . .

"Long after the struggle between the ideologies of the free world versus the enslaved world is settled, the most important war . . . will be the war for survival, the war against self-suffocation." To feed our people by present dietary standards and with the present rate of crop production, we will have to find an additional two or three-hundred-million acres of crop land by the year 2000 . . . The only hope of obtaining this is to improve the productivity of land through the application of science . . .

Without science and scientists "there can be no fight for survival, no war against retrogression." This fight is carried on by only about two-tenths of one per cent of our population, the three to four-hundred-thousand people now engaged in research activities for universities, for industry, and for the government.

Promoted: To sales representative for Pittsburgh Agricultural Chemical Company, subsidiary of Pittsburgh Coke & Chemical Company, J. Donald Mochi, who will serve the northeastern states. His headquarters are at the home offices of the company, 350 Fifth Ave., New York, N. Y. Mr. Mochi was formerly assistant to Dr. J. B. Skaptason, vice president of the company.

Meeting: Of the Society for Applied Spectroscopy to be held March 10, 1953, at the Socony-Vacuum Training Center, 63 Park Row, New York, N. Y. Dr. Shirleigh Silverman of Johns Hopkins University will speak on "Temperature Measurement by Spectroscopic Means.

Papers: On any field of interest to spectroscopy are wanted by Dr. Van Zandt Williams, Perkin-Elmer Corp., Norwalk, Conn., to be presented at the annual meeting of the Society for Applied Spectroscopy to be held May 15th. If you are interested in presenting a paper, please contact Dr. Williams.

Conference: On Analytical Chemistry and Applied Spectroscopy, to be held March 2-6, at the William Penn Hotel, Pittsburgh, Pa. The field of application in Applied Analytic Chemistry will be stressed. Over 100 papers will be presented. For program information, write P. R. Carr, General Chemical Div., Allied Chemical & Dye Corp., 439 Seventh Ave., Pittsburgh, Pa.

Elected: John P. Remensnyder, F.A.I.C., as chairman of the board of Heyden Chemical Corporation, 342 Madison Ave., New York 17, N. Y. Simon Askin replaces Mr. Remensnyder as president of the corporation.

Members: Of the Chicago AIC Chapter now serving on the Chicago Technical Council include Albert S. Henick as editor of SCI-EN-TECH NEWS; Dr. Edmund Field, Dr. B. S. Friedman, Robert Gnaedinger, and Dr. Gustav Egloff as directors; Harry E. Whitmore as general chairman of the Career Conference Committee; and Dr. Clifford E. Hampel as first vice president. Dr. Friedman also represented the Chicago Technical Council on the Mayor's Commission for School Board Nominations.

Spring Meeting: To be held by the American Society for Testing Materials on March 4th, at the Hotel Statler, Detroit, Mich., features a Symposium on Gloss Measurement.

Condensates

Ed. F. Degering, F.A.I.C.

Buckman Labs., Inc.

A never-ending game of hide-and-seek is proceeding, according to Crawford H. Greenewalt, F.A.I.C., president of the duPont Company, to provide the human resources needed for leadership for business, as well as for government, military, academic, and professional groups. Maintenance of adequate incentives to induce continuity of management is one of the most important problems faced today.

Of the eight amino acids considered essential to human nutrition, the four most needed for the improvement of the diet, according to N. W. Flodin of duPont, are lysine, methionine, threonine, and tryptophan.

The odds are more than 100 to 1 that you use ten words one-fourth of the time: the, and, to, you, of, be, in, we, have, it. The odds are also 100 to 1 that 300 words make up three-quarters of all the words you speak and write. Shakespeare used 16,000 words; Milton, 8,000. The Bible uses 5,000. A well-educated man today commonly uses 2,000. An unskilled laborer knows the meaning of hardly more than 800 of the most common words in the language —LIONS CLAUSE.

Isonicotinic acid hydrazide, the new antitubercular drug, has been released for distribution by the U. S. Food and Drug Administration.

More than 2,300,000 farm families produced the ingredients which went into the production of a billion pounds of margarine during 1951.

ASCARITE

(Registered Trademark)

SODIUM HYDRATE ASBESTOS ABSORBENT

Since its introduction in 1918, Ascarite has become the universally accepted standard CO_2 absorbent in the iron and steel industry.

Also widely used in quantitative organic microanalysis, and in the analysis of respiratory gases, etc.

A S C A R I T E (Registered Trademark), Sodium Hydrate Asbestos Absorbent. Prepared in accordance with the formula of the late James B. Stetser for the rapid and quantitative absorption of CO_2 in the determination of carbon in iron and steel and which, since its introduction in 1918, has become the universally accepted standard for this purpose; also used in carbon-hydrogen determinations, particularly in quantitative organic microanalysis, in the analysis of respiratory gases, etc.

While originally developed for use in the Stetser-Norton modification of the Midvale Absorption Bulb, it can be used with equal satisfaction in the Johnson modification, and in the original Midvale, Vanier, Fleming, Nesbitt, Miller, Turner and similar bulbs. Sixty grams of Ascarite (the contents of a Midvale Bulb) will absorb from 10 to 15 grams of CO_2. Therefore, 500 grams of Ascarite provides for from 2000 to 4000 determinations.

Color Change. During use, the color of Ascarite, which is light brown in the original product, turns to white due to the absorption of carbon dioxide and the formation of sodium carbonate. This color change occurs within a narrow zone and the color difference is so marked that it is possible to determine exactly when a bulb should be discarded.

Mesh	8 to 20	20 to 30
Per 1 lb., in bottle with plastic screw cap	**5.00**	**5.00**

5% discount in carton containing 12 x 1 lbs.

10% discount in lots of 48 lbs.
15% discount in lots of 144 lbs.
} One mesh or assorted.

ARTHUR H. THOMAS COMPANY

LABORATORY APPARATUS AND REAGENTS

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